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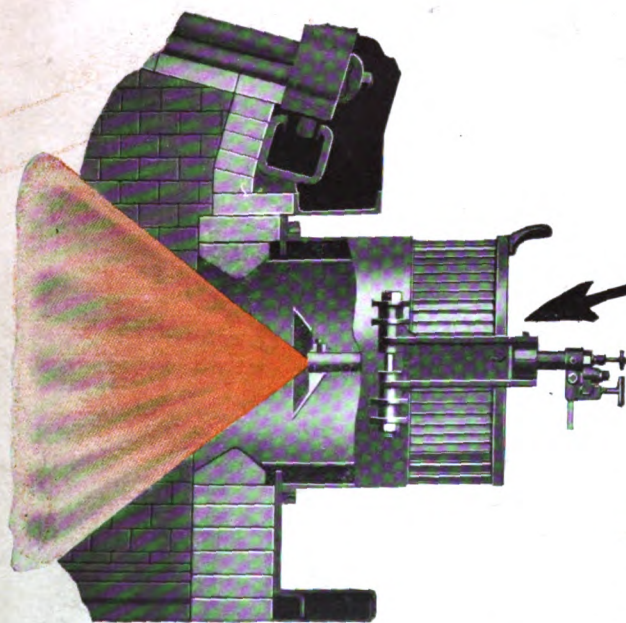
Marine Review

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*The National Publication Covering the Business of
Transportation by Water*

January, 1927

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SWING DESIGN NAT-
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FRONT for installation
under Watertube (or
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In addition to their inherent strength, welded joints are easy and economical to produce. The maintenance is zero. And finally, welding by the oxy-acetylene process is the most flexible method of construction that has yet been developed.



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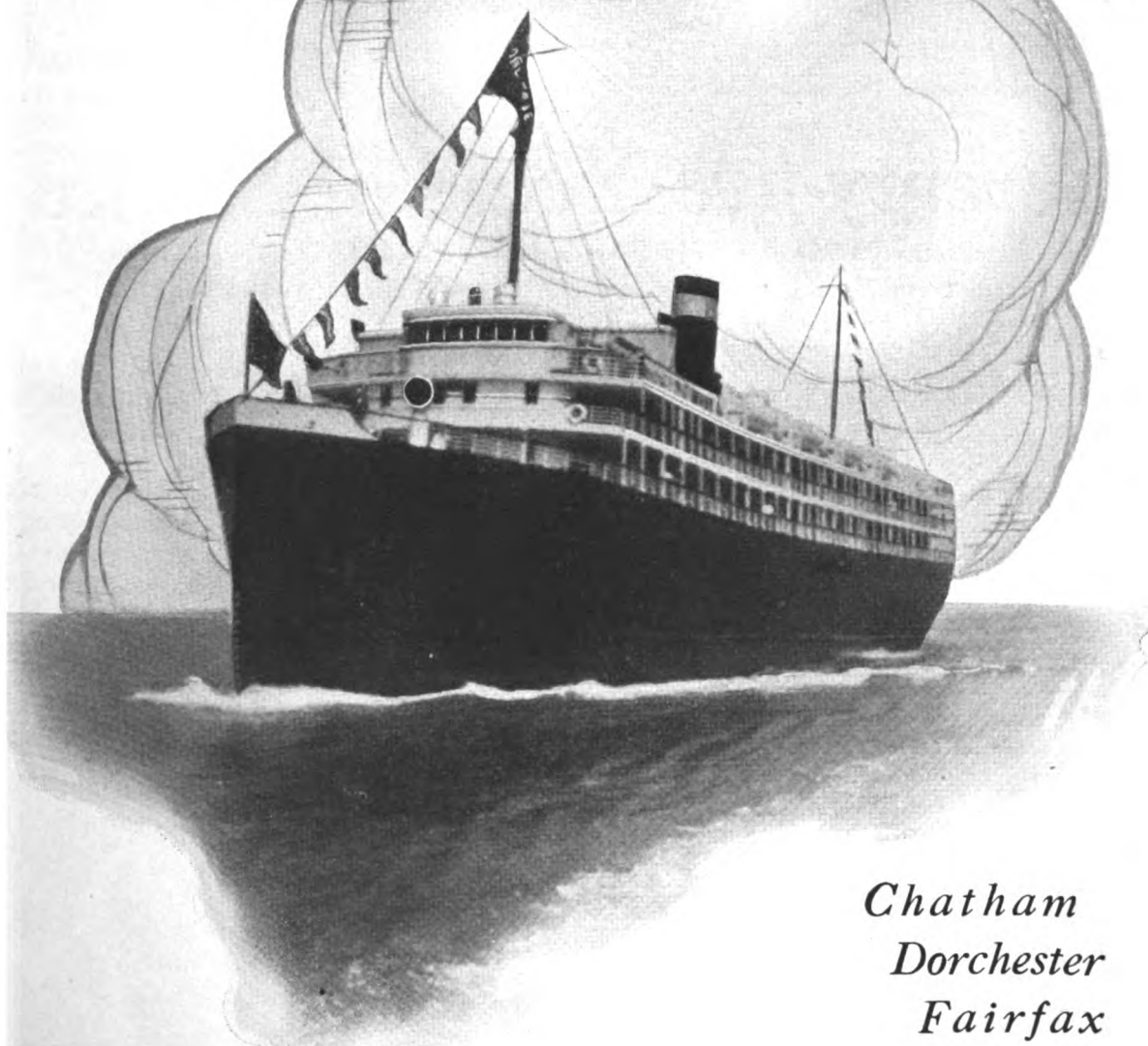
Unit of Union Carbide and Carbon Corporation
General Offices: Carbide and Carbon Building
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31 Plants—88 Warehouses
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Prest-O-Lite

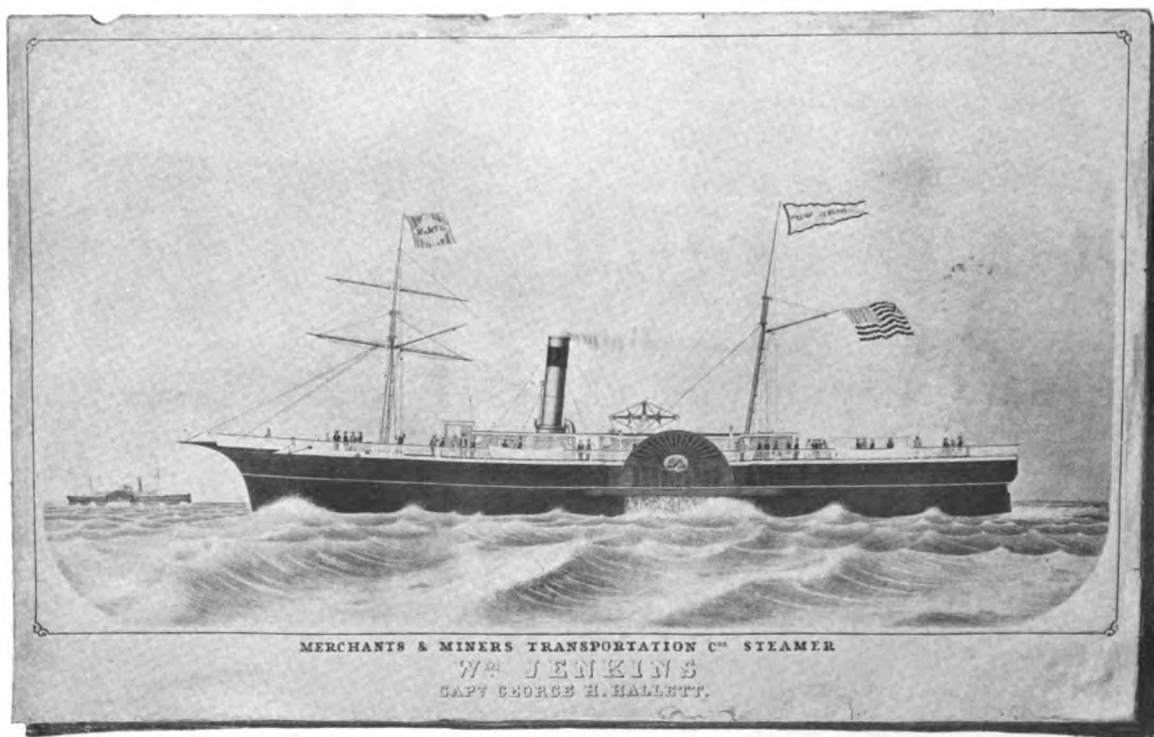
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Commemorating
The 75th Anniversary
Merchants & Miners
Transportation Company



Please mention MARINE REVIEW when writing to Advertisers



Wooden side wheel steamer built in Baltimore, 1854—This steamer and a similar vessel, the JOSEPH WHITNEY built in New York, 1854, were the earliest vessels of the Line

Seventy-five Years of Service

Merchants & Miners Line Founded 75 Years Ago Increases Cargo and Passenger Capacity—Three Modern Vessels Added in 1926

By A. H. Jansson

THE Atlantic seaboard of the United States, very naturally, with a large portion of the enormous commerce of the country seeking its ports as an outlet, offers an alluring vista to the ships of all nations. In considering the vast traffic in and out of these ports in the foreign trade, of which American ships carry less than one-third, we are forced to admit our present maritime inferiority. There is however an ever increasing interchange of traffic by water between the populous cities of the Atlantic coast. Each one of these cities is the natural distributing center for the industrial agricultural and mineral products of a large and rich area extending far inland. No section of the country has better transportation facilities.



W. J. BOND
Commodore captain, joined line in 1881, now captain of the FAIRFAX

Foreign vessels are excluded from coastwise traffic. Vessels engaged in this trade must be American built and owned. As a result of this law and the growing demands of commerce a very considerable fleet, approximately one-half of all the ac-

tive American seagoing tonnage is now engaged in this trade.

Competition is active but it is on a basis of equality in building cost and operating expense for all. Consequently steamship lines in this trade when properly managed are able to show a reasonable profit. It is obvious therefore that this section of our merchant marine will forever prevent the total extinction of American ships from the ocean.

As the country continues to develop in population and wealth this fleet will grow in number, and the size of ships will increase, until it will constitute by itself a large merchant marine. Intercoastal traffic and the West coast to Honolulu trade already requires first class ocean liners and two such vessels are now being built. The coastwise merchant marine is also an asset of great value in national defense. It has been heavily drawn upon both in ships and personnel in the wars of the nation. Two very important incidental



J. H. RUDOLPH
Senior chief engineer, began service, 1893, now chief on the CHATHAM

benefits also come from the continued success and growth of coastwise shipping. Thousands of men are trained and given profitable employment in an occupation that will continue to appeal to the deep rooted instinct for the sea which will never cease. Shipbuilding is an essential industry. The cessation of building for the navy makes the shipyards dependent on new tonnage for the merchant marine. New vessels for domestic commerce help to keep established shipyards going. Repairs and reconditioning of a constantly growing fleet of merchant vessels, in the aggregate, represents a considerable volume of much needed work for the shipyards.

To furnish transportation for the commodities of the merchant and miner, between Boston and Baltimore, was the purpose of the founders of the Merchants and Miners Transportation Co. and that is how it got its unusual and distinctive name. The steady growth of this old coastwise steamship line since its beginning 75 years ago is indicative of at least two definite facts; first that there existed from the start an incipient demand for the service, which has grown, as the country has grown, to great proportions, insistent in its needs; and second that the service afforded has been such as to attract a constantly



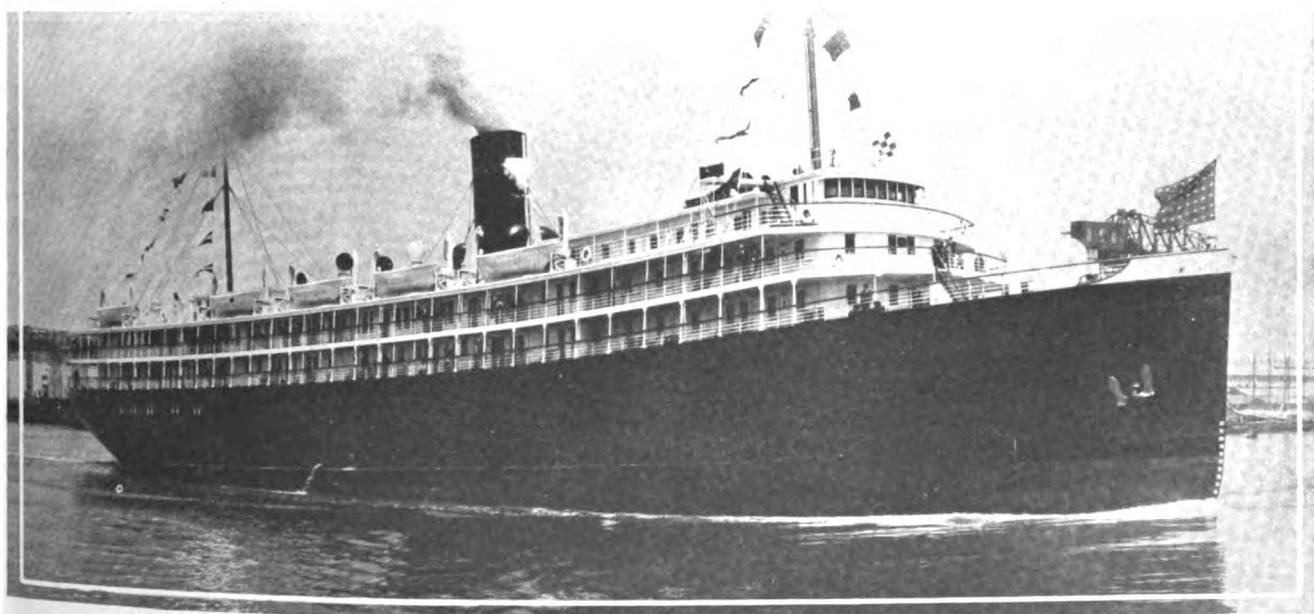
A. D. Stebbins

*President and General Manager
Merchants and Miners Transportation Co.*

increasing volume of this trade. As population increases and the products of agriculture and industry multiply efficient transportation is essential in the distribution of these products if trade and commerce are to be developed. No business enterprise can long continue unless it is able to offer a needed service at a cost which makes that service profitable to both the customer and itself. There is probably an economic balance which must be considered in the establishment of transportation agencies to serve the prospective demands of commerce. In other words trade for its development is absolutely de-

pendent upon adequate means of transportation. On the other hand no private company can afford to pioneer in the establishment of steamship lines very far in advance of the actual needs of business.

No real advance however has ever been made without vision and courage; the ability to see possibilities before they actually materialize and the courage to act accordingly. For progress therefore it is necessary for the successful line not only to keep pace with the demands of commerce but to act as a stimulus to expansion by being ready to offer, beyond these established demands, quick dependable transportation at rea-



S. S. DORCHESTER, latest addition to the Line—Built with two sister vessels at Newport News, 1926

sonable rates and on short notice.

The progressive shipowner will be altogether as courteous to his customers and as insistent that every human effort be made to provide the best possible service to give utmost satisfaction as is the successful merchant, though it must be admitted that he does not have as complete a control over all the factors concerned. But the successful shipowner will do more than this. He will initiate improvements in his service by incorporating ideas of his own gained through experience and by taking advantage of the advance constantly being made in shipbuilding in order to keep existing ships up to date and to obtain the best and most suitable types of new ships. It is along these lines that the Merchants and Miners Transportation Co. has gained the good will of passengers and shippers and the loyalty of its personnel afloat and ashore and has thus been able to build up a large and successful business.

Founded 75 Years Ago

One of the oldest coastwise steamship lines, it was incorporated in Maryland April 24, 1852, with a capital stock of \$100,000. The original incorporators were W. S. Woodside, Hugh Jenkins, Benjamin Deford, John H. Ehlen and Edward Williams. The charter was transferred to several business men having in mind a line of steam vessels between Norfolk and Boston. The first attempts by these men to obtain the necessary capital failed. It was not until 1854 that a sum of \$200,000 was raised, \$80,000 of this amount in Boston and \$120,000 in Baltimore. J. W. Pottle & Co. subscribed the largest amount of the subscription from Boston with the understanding that they were to be agents in that port. Two wood side wheel steamers of a capacity of about 1000 tons each were built, the JOSEPH WHITNEY in New



York and the WILLIAM JENKINS in Baltimore. The first trip in the regular line was made by the JOSEPH WHITNEY, leaving Boston 8 p.m., Dec. 28, 1854 arriving Baltimore Jan. 1, 1855, after a run of 60 hours. It is interesting to note that the present schedule, 72 years later, calls for 50 hours between these two ports.

The first election of directors took place March 31, 1855, the following being elected: Thomas C. Jenkins, Solomon R. Spaulding, George J. Appold, Benjamin Deford and Jonathan Pottle. Thomas C. Jenkins was elected president, S. R. Spaulding, secretary and treasurer at Boston, William Kennedy, treasurer at Baltimore and A. Fuller Crane, secretary at Baltimore.

Early History of Line Recounted

Baltimore was then, as it is now the home of the headquarters of the company. A glance at the illustration of the wooden side wheeler WILLIAM JENKINS one of the two earliest vessels of the line and fitted with a single expansion beam engine, will vividly indicate the many advances in the art of shipbuilding which have taken place since the foundation of the company. The fine new passenger and freight steamers, CHATAM, DORCHESTER and FAIRFAX completed and placed in service during 1926 also shown in accompanying illustrations, are very substantial practical examples of this advance in the art of shipbuilding.

An account of the line dated Boston, June 16, 1869 and written by H. A. Whitney one of the early directors of the company may be quoted in part as follows: "Having met with neither fire or marine losses the company was fairly prosperous; the capital stock was in-

creased by further assessments to \$300,000; two other ships, the S. R. SPAULDING and BENJAMIN DEFORD were built at Wilmington, Del., and the prospects of profitable returns were improving when in the spring of 1861 the WILLIAM JENNINGS was set fire to and burnt at her wharf in Savannah proving a total loss. The business of the line not having sufficed to keep all four of the steamers regularly employed, the experiment was being tried of obtaining freight between

Table I Freight and Passenger Service of the Merchants and Miners Transportation Co.

Distances and Sailings Between Ports

	Miles	Hours	Sailings Each Week
Boston and Norfolk	532	38	Three
Boston and Philadelphia	483	38	Three
Boston and Baltimore	703	50	Two
Providence and Norfolk	411	30	Two
Providence and Baltimore	582	42	One
Philadelphia and Boston	483	38	Three
Philadelphia and Savannah	695	52	Two
Philadelphia and Jacksonville	842	64	Two
Baltimore and Boston	703	50	Two
Baltimore and Providence	582	42	One
Baltimore and Savannah	623	50	Two
Baltimore and Jacksonville	770	62	Two
Baltimore and Norfolk	171	12	Three
Norfolk and Baltimore	171	12	Two
Norfolk and Providence	411	30	Two
Norfolk and Boston	532	38	Three
Savannah and Baltimore	623	50	Two
Savannah and Philadelphia	695	52	Two
Savannah and Jacksonville	147	12	Four
Jacksonville and Baltimore	770	62	Two
Jacksonville and Philadelphia	842	64	Two
Jacksonville and Savannah	147	12	Four
Philadelphia and Miami	1071	87	1 @ 5 days
Miami and Philadelphia	1071	71	1 @ 5 days

Literature Shows Progress of Line

Merchants & Miners Transportation Co.



FOYER AND ART



FOYER AND ART



SOCIAL HALL



DINING SALOON



FINEST COASTWISE TRIPS IN THE WORLD

TRAVEL BY SEA



1901 - 1909



FINEST COASTWISE TRIPS IN THE WORLD

TRAVEL BY SEA

CULINARY DEPARTMENT



SMOKING ROOM



FINEST COASTWISE TRIPS IN THE WORLD

TRAVEL BY SEA

OCEAN TRIP



1916



FINEST COASTWISE TRIPS IN THE WORLD



Culinary Department



Smoking Room



1920



FINEST COASTWISE TRIPS IN THE WORLD

TRAVEL BY SEA

SALOON



1926



FINEST COASTWISE TRIPS IN THE WORLD

TRAVEL BY SEA

Merchants and Miners Transportation Co.



1926



FINEST COASTWISE TRIPS IN THE WORLD

TRAVEL BY SEA

Merchants and Miners Transportation Co.



1926



Merchants and Miners Transportation Co.



1926



THE "FIVE SISTERS" of the Atlantic Coast



1926



Merchants and Miners Transportation Co.



1926



Merchants and Miners Transportation Co.



1926



Merchants and Miners Transportation Co.



1926



Merchants and Miners Transportation Co.



1926



Merchants and Miners Transportation Co.



1926



Merchants and Miners Transportation Co.



1926



Table II

Ships Owned and Operated by the Merchants and Miners Transportation Co. January, 1927

Name of Steamer	Length feet	Beam feet	Passengers		Speed knots	Gross	Tonnage Net	Dead- weight	Where Built	When
			Cabin	Others						
Alleghany*	368	52	207	24	13½	5486	3261	3300	Federal S.B. Co.	1923
Berkshire*	368	52	207	24	13½	5486	3261	3300	Federal S.B. Co.	1923
Chatham*	368	52	302	12	13½	5486	3261	3300	Newport News S.B. Co.	1926
Dorchester*	368	52	302	12	13½	5486	3261	3300	Newport News S.B. Co.	1926
Essex	318	40	70	0	12	3018	2155	2721	Wm. Cramp & Sons	1890
Fairfax*	368	52	302	12	13½	5486	3261	3300	Newport News S.B. Co.	1926
Gloucester	296	42	117	10	12	2541	1976	2500	Maryland Steel Co.	1893
Grecian	290	42	90	0	12	2827	1994	2558	Harlan & Hollingsworth	1900
Howard	333	42	125	9	13	3581	2278	3056	Harlan & Hollingsworth	1895
Indian	289	38	Freight only		11	1955	1135	2503	Harlan & Hollingsworth	1890
Juniata	333	42	123	9	13	3465	2537	3056	Harlan & Hollingsworth	1897
Kershaw	298	42	Freight only		13	2741	1654	2316	Harlan & Hollingsworth	1899
Nantucket	298	42	113	13	13	2599	1767	2436	Harlan & Hollingsworth	1899
Ontario	315	42	108	0	13	3099	1952	2580	N. Y. Shipbldg. Co.	1904
Persian	311	40	98	0	11	2677	1890	2600	J. Roach & Son	1882
Tuscan	290	42	Freight only		13½	2415	1335	2813	Maryland Steel Co.	1907
Upshur*	261	43.5	Freight only		11	2637	1654	4150	American S.B. Co., Cleve.	1919
Volusia*	261.8	43.7	Freight only		11	2686	1684	4200	Globe S.B. Co., Superior, Wis.	1919
Wyoming*	261.8	43.7	Freight only		11	2689	1684	4200	Manitowoc S.B. Corp.	1919
York	261	43.5	Freight only		8	1998	1170	3100	McDougall-Duluth	1918
Totals—13 Pass. and 7 Frt. Ships			2164	125		68,357	43,170	61,289		

Note:— All of these ships are driven by reciprocating steam engines, and all have scotch boilers. Those marked * are oil burning, all of the others are coal burners.

Boston, Savannah and Baltimore; and it was during the excitement and agitation which preceded the war that the WILLIAM JENKINS was burnt under circumstances too well known to be recounted.

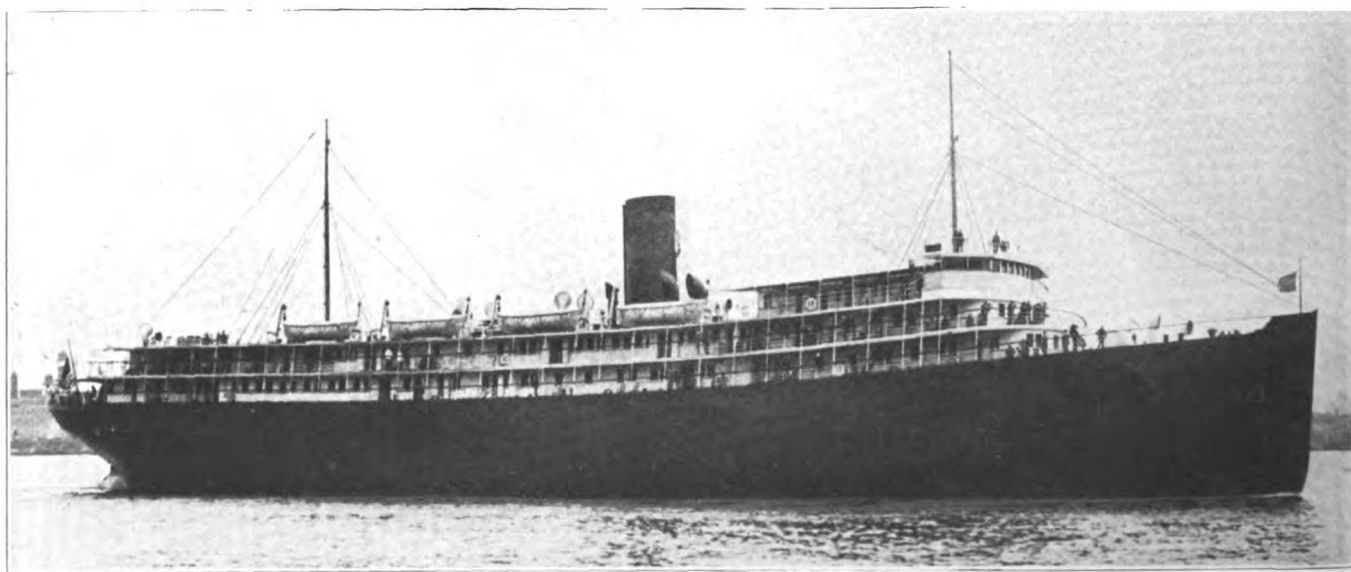
"In 1859 it was thought that cargoes might be obtained to and from Rhode Island and the interior of New England if some of the steamers were placed on a line between Baltimore and Providence. . . .

"The breaking out of the Rebellion in April 1861 for a time interfered

with legitimate business and in September of that year the JOSEPH WHITNEY was sold at a low price to the war department for a transport. The steamer's name was changed to McCLELLAN and a large sum was expended on her. The proceeds of the sale were divided as a dividend of principle and the stock reduced in proportion; but in 1864 the capital was again increased to \$296,825 by an assessment of \$25 upon each share. Some stockholders not responding, left the capital short of the sum aimed

at by \$3,175. . . . The McCLELLAN is again owned by the company having been repurchased in 1867 from parties who bought her of the government. This steamer is in excellent condition and since our purchase has been thoroughly repaired, strengthened and recoppered.

"During the war the S. R. SPAULDING and BENJAMIN DEFORD were employed in government service, and although remunerative at the time, the effects of suspending the line have been felt ever since. The demands



S. S. BERKSHIRE IN DELAWARE RIVER—COMPLETED AT THE FEDERAL S. B. & D. D. CO., KEARNY, N. J., MAY, 1923

for transportation between Boston, Norfolk and Baltimore, were very considerable during those four years of civil strife. . . . It was thought that the service referred to, would, in great measure, be a return for the burning of the WILLIAM JENKINS and the loss of our business; but notwithstanding the remonstrances and protests of the directors, and in violation, as they considered, of the agreement and statements through which the charter parties were signed, the steamers were retained by the United States government, and in 1865, passed into other hands at public sale. Under the names of the SAN JACINTO and SAN SALVADOR, they now run between New York and Savannah.

Early Steamers Ordered

"In 1864 a wooden screw steamer built by Mr. W. Goodspeed at Goodspeed's landing Connecticut, was purchased in New York, before her machinery was all in, and named the WILLIAM KENNEDY. Within a few weeks she had received her new boiler and been thoroughly refitted. Just previous to her purchase the FUNG SHUEY had been bought, and again sold at some profit, before going into commission.

"The same year, the wooden screw steamer GEORGE APPOLD was built for us in Philadelphia, by Mr. John Lynn, and is still doing excellent service.

"In February of the present year (1869), the iron screw steamer WILLIAM LAWRENCE, built under contract by the Atlantic Works of Boston, was completed, and began her regular trips, and has thus far given great

satisfaction. This steamer is only partially paid for; but the directors felt justified in incurring a considerable debt, through the necessity of making the line efficient and of anticipating the possible calls of shippers.

"There is a fair amount of fire insurance on our four steamers; but the rates for marine risks are such, twelve to fifteen per centum annually, that, with the rapid deterioration

of this class of property, it has not been deemed possible to pay these premiums and yet to declare any dividends. It is therefore left to individual stockholders to protect their interest by marine insurance, as discretion may dictate.

"For a year after the war, owing mainly to the unexpected course of the government, the prospects of the company were far from encouraging and its fortunes and property were at a low ebb. But by exertion and perseverance, unanticipated drawbacks have in part been overcome; . . .

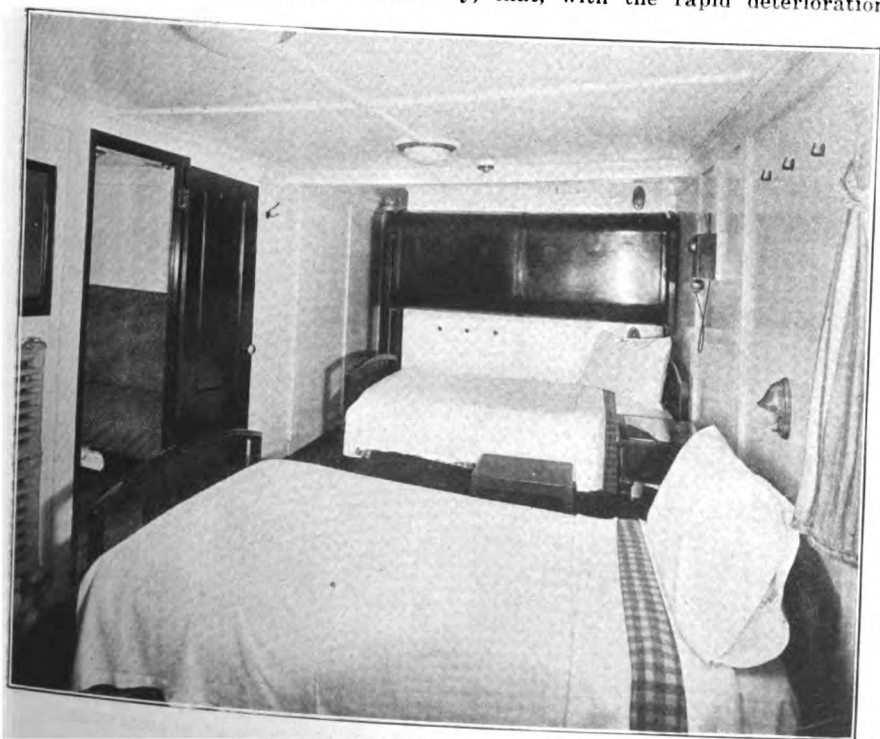
A Permanent Record of Line

"Although the writer of this note has transgressed the powers conferred upon him, as one of a committee with Mr. Decatur H. Miller, to redraft the by-laws and print them as adopted, in connection with the acts of incorporation, his attempts to preserve in a permanent form some memorial of the origin and later fortunes of the Merchants and Miners Transportation company will be pardoned when it is recollected how difficult it is, after a lapse of a few years, to pick up the threads of even the most simple history; while he alone is responsible for any inaccuracies, mis-statements, or assertions, which the note may contain."

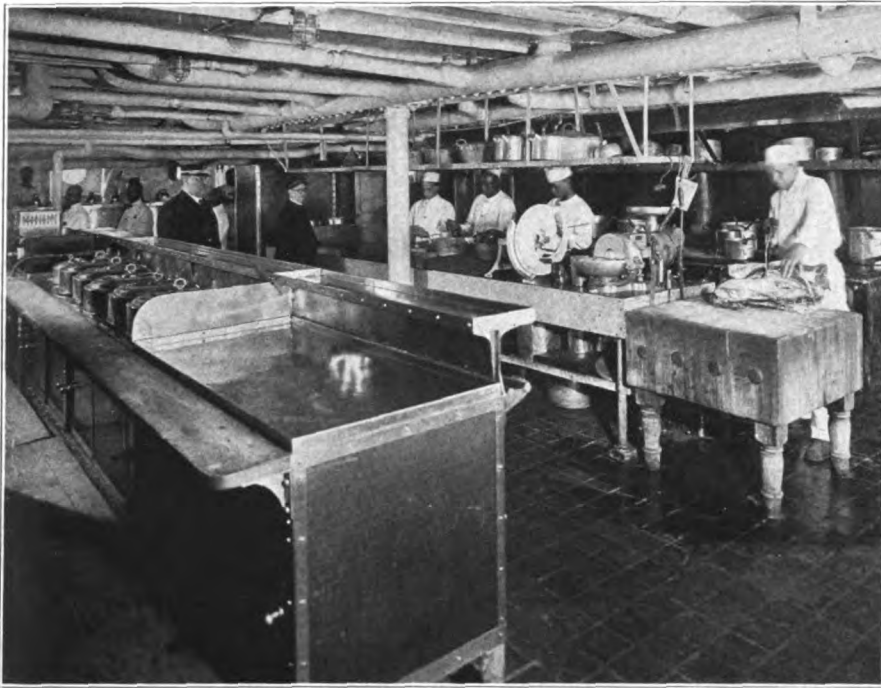
This document written nearly sixty years ago is probably unique in its deliberate attempt to set down for posterity some parts of the history of the foundation of this steam-



S. S. CHATHAM LEAVING THE YARD OF HER BUILDERS, NEWPORT NEWS SHIPBUILDING & DRYDOCK CO., MAY, 1926—SAILED ON HER MAIDEN VOYAGE FROM BALTIMORE FOR SAVANNAH AND JACKSONVILLE



A SUITE ON THE S. S. CHATHAM



GALLEY ON S. S. CHATHAM—COMPLETE IN EVERY DETAIL AND WELL PLANNED

ship company and is therefore of value in building up a true record of the American merchant marine.

The Baltimore-Boston service of the company was re-established immediately after the Civil war, but the service between Baltimore and Providence was not resumed until 1873. In 1876 a line was established between Baltimore and Savannah, Ga.

From the beginning the services offered by the company were well received and patronized, and the high reputation established, for fair dealing, reliability, expeditious movement of freight and care for the comfort and convenience of passengers, has

continued up to the present day and is now a firmly rooted tradition. Step by step the company grew and prospered.

Then came the Spanish-American war and several of the company's ships were again taken over by the government, but this time, unlike during the Civil war, the regular schedule was maintained without serious interference, and a period of most active growth and expansion began shortly after peace was declared. In 1900 a line was established between Philadelphia and Savannah. This line and the one from Baltimore to Savannah were extended in 1905 to

take in the city of Jacksonville, Fla. Two years later the Philadelphia-Boston line was added to the service of the company.

Growth in population, industry and prosperity of the sections served combined with the enterprise of the managers of the company in anticipating the increased demands of traffic, contributed to the progress of the Merchants & Miners to its present strong position in coastwise trade. The company was quick to see the necessity of additional seaboard links of transportation when the initial development of great transportation activities began immediately after the Civil war. Cotton, lumber, cottonseed oil, resin and other raw materials from the South were shipped to industrial New England. Pig iron was brought from Alabama and Virginia. Wool from Ohio and other inland districts went to New England textile mills by way of Newport News and Norfolk. Boston was the distributing point for oysters from the Chesapeake bay country and with other northern cities furnished a market for truck farm products in large quantities from Virginia and the Carolinas as well as for Florida citrus fruits. This was only a start of a shipping business that was destined to increase far beyond the expectations of the men who pioneered it.

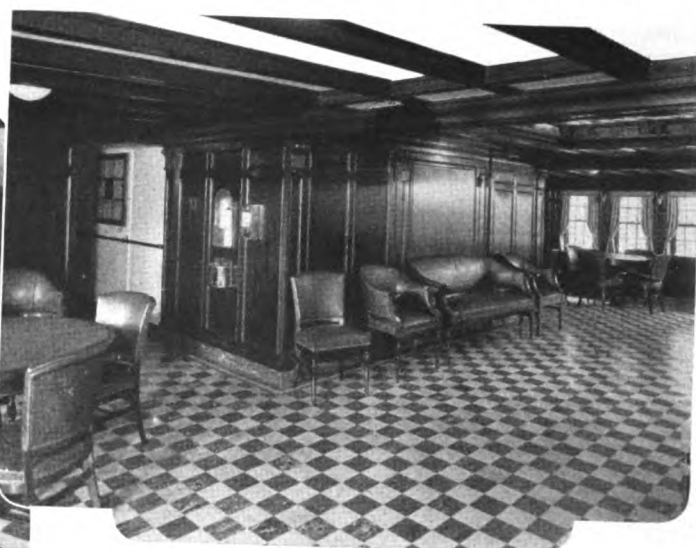
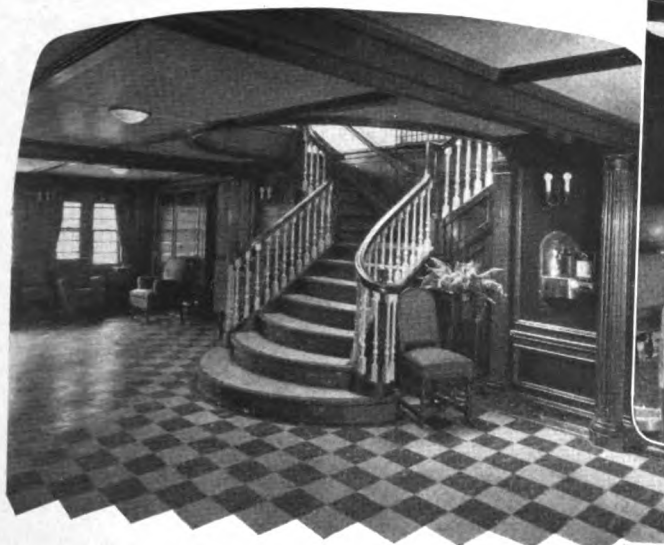
Thus for ten years prior to American participation in the World war the services of this company included all the important East coast American seaports and centers of commerce with the exception of New York and the Carolinas. These services extended over the entire length of the



S. S. DORCHESTER—AT LEFT—A GAME OF SHUFFLE BOARD ON DECK—AT RIGHT—PASSENGER DECK IN WAY OF STATEROOMS
FOUR OTHER NEW STEAMERS, THE CHATHAM, FAIRFAX, BERKSHIRE AND ALLEGHANY ARE SIMILAR IN ARRANGEMENT

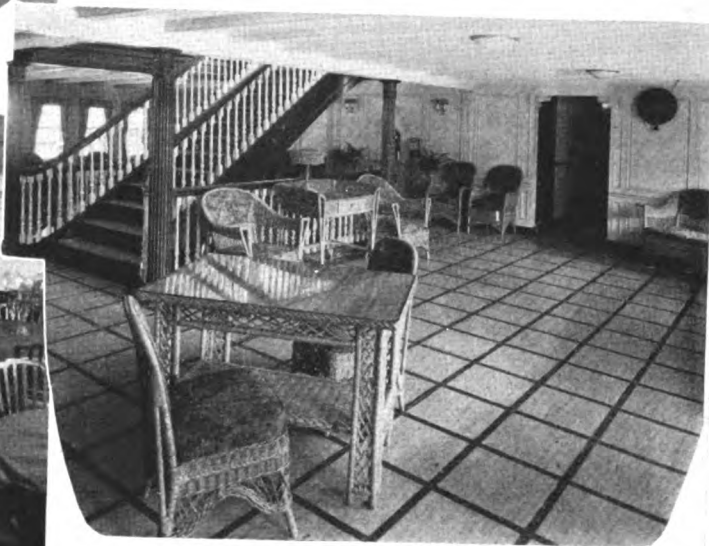
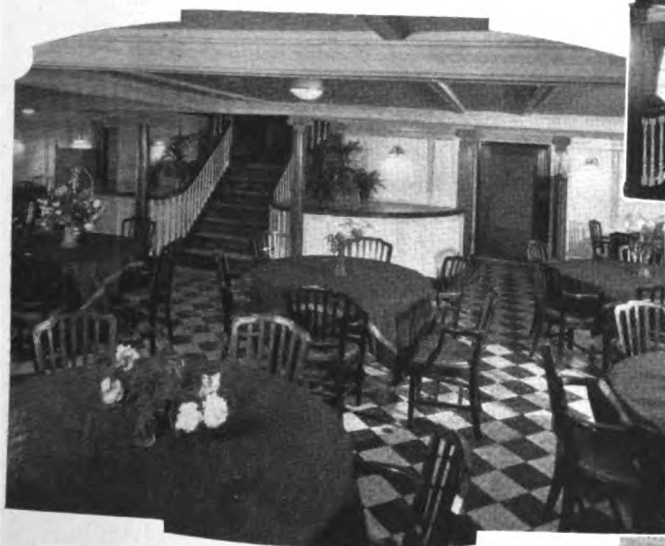
Fine Public Spaces on S. S. Chatham

Lounge



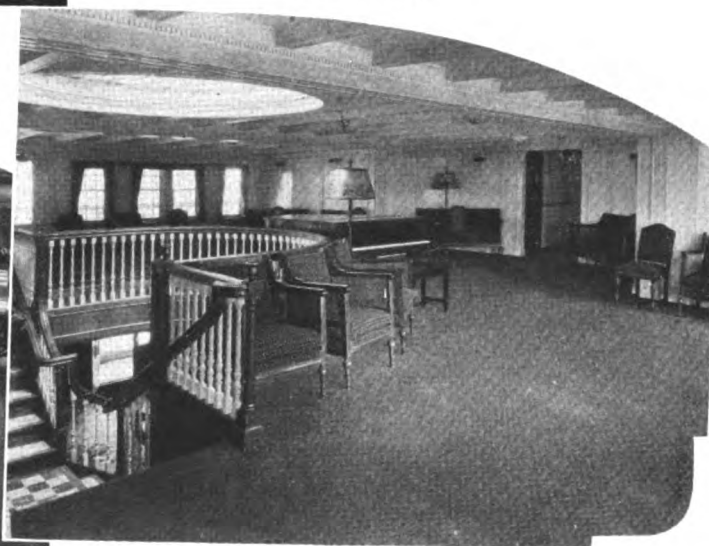
Smoking Room

Dining Room



Social Hall

Dancing Pavilion



Music Room

Atlantic seaboard from Boston to Jacksonville. During the Great war services were greatly reduced due to the urgent need for ships, the government commandeering the company's entire property. Such services as were maintained were under government control and operation. After the war all the lines were re-established upon the return of its property to the company by the government.

Begin Services to Miami

In keeping with its traditional policy, the company recognizing the need of additional service between the ports of Philadelphia and Miami, Fla. inaugurated a line between these ports on Jan. 4, 1925. The first sailing was made on that day by the S. S. BERKSHIRE from Philadelphia with about 200 passengers. This was further extended on Nov. 1, 1926 to sailings every five days from Philadelphia to Miami direct with the new passenger and freight steamers BERKSHIRE and DORCHESTER. A line to carry freight only, was inaugurated between Baltimore and West Palm Beach, Fla., on June 30, 1926. This service is now continued as a line from Savannah to West Palm Beach, with the recently acquired shipping board

laker S. S. YORK. Through freight for Palm Beach is accepted from Boston, Philadelphia or Baltimore and is transhipped at Savannah. One sailing every week is maintained.

In recent years the activity in Florida added greatly to the company's business and for many months during the peak all facilities were crowded to the limit. However, even after the speculative influences had been deflated there still remained an increased trade that promises to continue to expand with the normal healthy growth of Florida and other sections of the South now undergoing an industrial awakening.

Though the company was originally established for the transportation of freight, it early became apparent to the management that a profitable passenger business could be developed based on the universal appeal of ocean travel as a recreation and a pleasurable adventure, restful and beneficial, physically and mentally. Consequently combination passenger and freight vessels built to provide every comfort and convenience for passenger travel were placed in service.

There is now in operation a fleet of twenty ships as listed in Table II page 16, thirteen of these being combination passenger and freight vessels

and seven for freight only. Table I page 14, gives the passenger and freight lines now being maintained on regular scheduled sailings.

Passenger Traffic Is Growing

This completes in general outline the origin and progress over three quarters of a century, of a coast-wise steamship company which may justly be called a pioneer in the establishment of regular ocean service for passengers and freight between New England, through Boston and Providence, and the South and West through Baltimore and the Ports of Newport News and Norfolk, Va. and South through Jacksonville.

Steamships in the longer coastal runs cannot compete with railroads for travelers who are bound on business. In a well-to-do and populous country such as the United States, however, a great number of people travel for recreation and pleasure and many of this class prefer the freedom, exhilaration and interest of going by steamer.

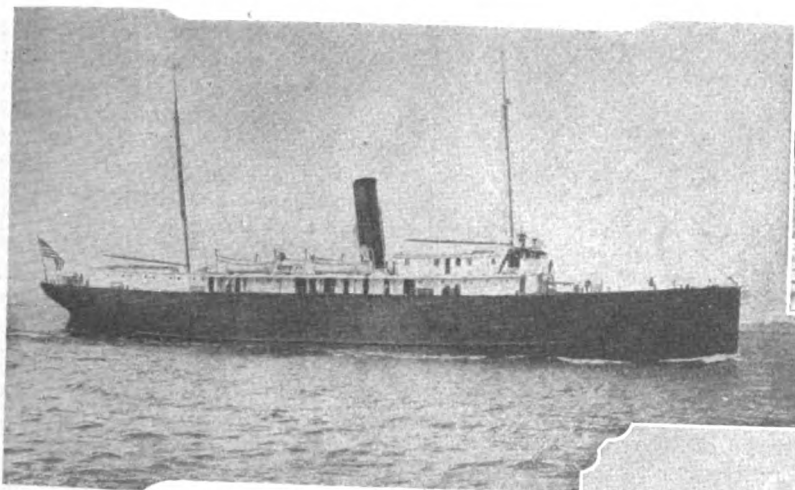
As far as expense is concerned traveling in this manner with accommodations and meals included is less than by rail. Growing popularity of its passenger service has made it necessary for the Merchants and



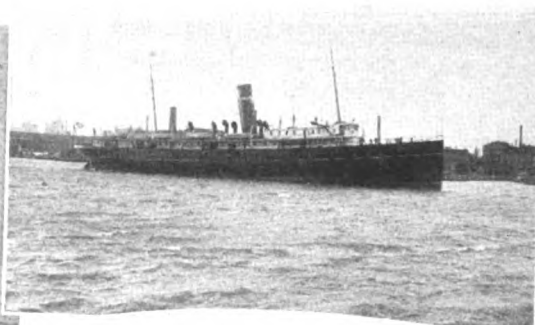
Home and field staff, Merchants & Miners Transportation Co. taken at Baltimore, Oct. 10, 1924. Located at Baltimore unless otherwise noted—Standing in back row—Left to right—Willard L. Smith, soliciting freight agent; W. Wadsworth, secretary and treasurer; J. R. Bell, freight representative, St. Louis; A. H. Lawson, freight representative, Boston; T. H. Swank, general counsel; C. S. Buford, commercial agent, Atlanta; T. V. Blackburn, traveling freight agent, Philadelphia; H. C. Jones, agent, Newport News; T. W. Kennedy, auditor; A. Cradock, purchasing agent; T. H. Penn, general passenger agent; E. E. Laffiteau, traveling freight and passenger agent, Savannah; Alexander Gawlis, chief clerk to general traffic manager. Second row standing—Left to right—R. F. Riley, traveling freight agent, Jacksonville; H. D. Ray, traveling freight agent, Boston; C. M. Haile, general agent, Jacksonville; H. F. Orr, general eastern agent, New York; T. F. Lips, special agent; E. E. Hinman, commercial agent, Pittsburgh; James Barry, general claim agent; H. M. Cornwall, superintendent Baltimore division; H. P. Willmer, general freight agent; Thomas Barber, New England passenger agent, Boston; A. L. Campbell, traveling freight agent, Pittsburgh; H. H. Stepler, chief clerk, assistant general freight agent, Philadelphia; A. L. Bongartz, general agent, Philadelphia; John Leigh, superintendent Philadelphia division, Philadelphia; W. F. Barwell, freight representative, Philadelphia. Third row sitting—Left to right—D. R. McNeill, superintendent transportation; Herbert Sheridan, late traffic manager; A. E. Porter, general agent, Norfolk; J. B. Sweeny, general traffic manager; A. D. Stebbins, president and general manager; C. H. Maynard, general agent, Boston; R. M. Griffin, general agent, Savannah; William W. Tull, general agent; William H. Miller, general agent, Providence. Fourth row sitting—Left to right—A. S. Ellis, freight representative; E. F. Cavaleri, traveling freight agent, Atlanta; John F. Ward, commercial agent, Tampa; Herbert F. Griffin Jr., traveling freight agent; T. F. Durkin, freight representative, Providence; C. D. Swank, assistant to the president; Alan W. Graves, assistant general freight agent, Philadelphia.

Six Older Ships of the M. & M. Line

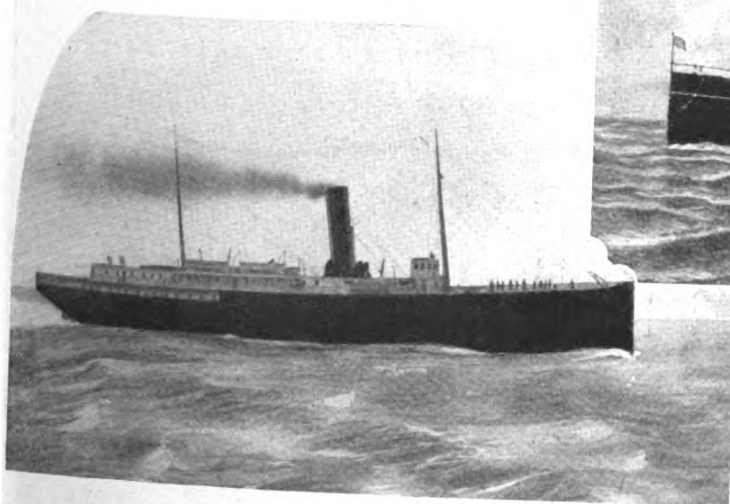
S.S. Grecian



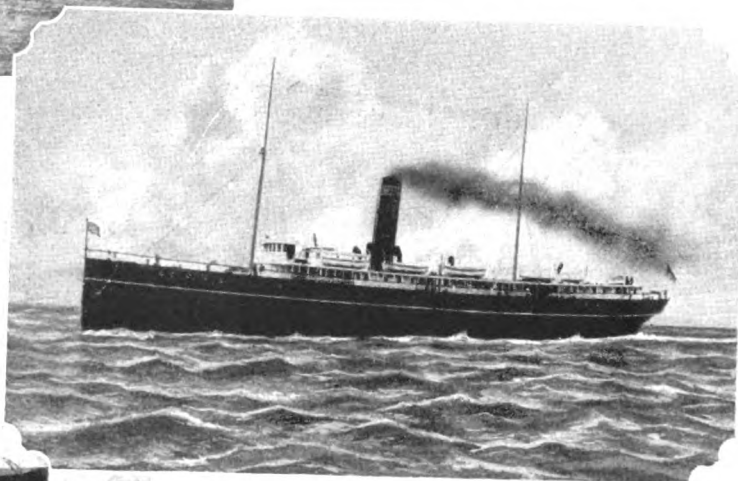
S.S. Ontario



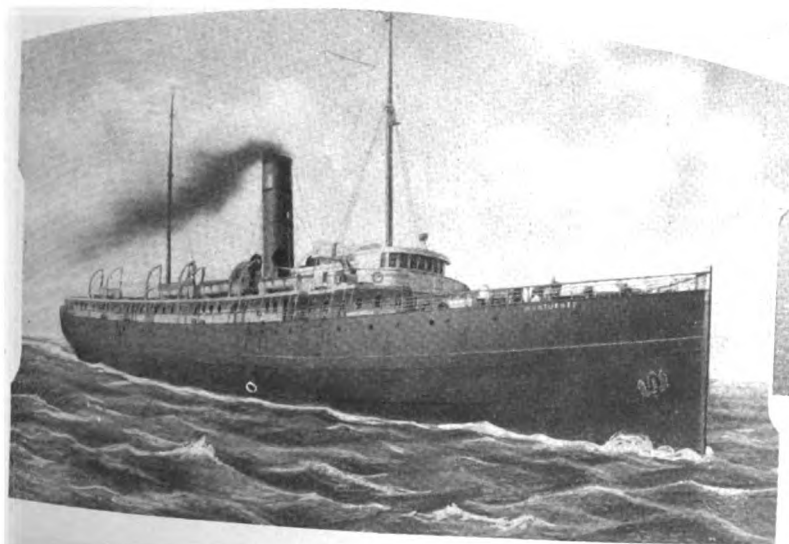
S.S. Cretan



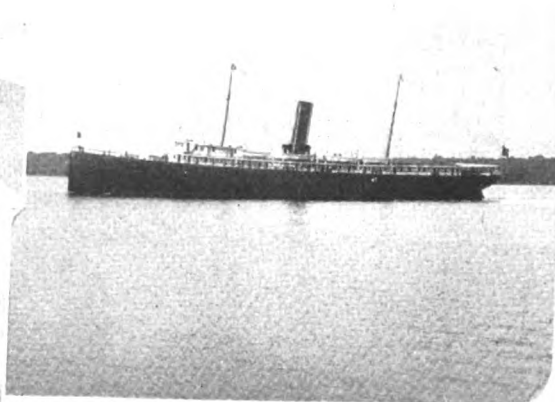
S.S. Gloucester



S.S. Nantucket



S.S. Howard



Miners Transportation Co. to steadily increase the total of passenger accommodations in its fleet and this branch is now a considerable and profitable part of the total business. The combined passenger capacity of the fleet is at present 2289 including the three latest and finest ships, the CHATHAM, DORCHESTER and FAIRFAX, in the order in which they were placed in commission in the services of the company during 1926.

The number of passengers carried by the company on all its lines during the past several years has increased steadily. The figures are; 50,198 for 1923; 54,947 for 1924; 63,051 for 1925; and 51,629, for the first nine months of 1926.

Broadly considered there are three conditions which affect the growth of passenger business. 1. What is known as good times which means widespread and general prosperity, 2. The historic interest, educational, cultural, climatic, natural and artificial

Captains and Engineers M. & M. Transportation Co.

January, 1927

Ship	Captain	Chief Engineer
Alleghany	B. F. Hatch	G. Righter
Berkshire	S. T. Herbert	B. Connors
Chatham	T. P. Pratt	J. H. Rudolph*
Dorchester	C. C. Jones	E. L. Blaisdell
Essex	G. J. Hart	W. J. Crosson
Fairfax	W. J. Bond*	J. Oliver
Gloucester	J. L. Dix	C. E. Marsh
Grecian	E. S. Brooks	F. T. Disney
Howard	C. Kirwin	E. A. Heyn
Junia	W. E. Payne	W. A. Aumack
Kershaw	J. E. Ryan	J. Davidson
Nantucket	W. E. Hurley	N. A. Hudgins
Ontario	A. H. Brooks	J. E. Dutton
Persian	L. B. Kendrick	E. S. Smith†
Tuscan	J. Kausrud	C. W. Heyn
Upshur	H. E. Blake	J. Murt†

NOTE: The names of the captains and chief engineers of the remaining four ships, the INDIAN, WYOMING, VOLUSIA and YORK were not available when this list was prepared. *Oldest captain and chief engineer in point of service. †Acting chief engineers.

attractions of the cities and surrounding communities between which the services are operated. In this respect the Merchants and Miners is

particularly fortunate as in all these items the different routes present much to interest the traveler, 3. Maximum of service at reasonable rates. In this the management is solely and directly responsible in providing good ships with clean well ventilated, comfortable staterooms, promenade decks and spacious and tastefully appointed public rooms, the best of food well prepared and served, efficiency and courtesy on the part of all the personnel, so that at the end of the voyage everyone will have only the pleasantest recollections of the trip. A quality service of this sort will establish for a line a high reputation which is bound to be reflected in increased business.

The three latest ships added to the company's service during 1926, sister ships of the ALLEGHANY and BERKSHIRE completed in 1923, the CHATHAM, DORCHESTER and FAIRFAX built by the Newport News Shipbuilding & Drydock Co. represent in

TABLE III

Steamers Built for or Acquired by Merchants & Miners Transportation Co. since the Foundation of the Line in 1852

(Exclusive of those added in the last four years--See Table II page 16)

Name of Steamer	Where Built	Year	Material	Length ft. in.	Beam ft. in.	Horse- power	Cost to Build	Purchase Cost
William Jenkins	John A. Robb, Baltimore	1854	Wood***	210	31	350	\$110,000	.....
Joseph Whitney	John Englis, New York	1854	Wood***	215	33	360	109,000	.....
S. R. Spaulding	Harlan & Hollingsworth	1859	Iron***	220	33	500	140,000	.....
Benjamin Deford	Harlan & Hollingsworth	1859	Iron***	220	33	500	140,000	.....
George Appold	John Lynn, Philadelphia	1864	Wood	232	38	500	177,000	.....
Fung Shuey	E. S. Whitlock, Brooklyn, N. Y.	1864	Wood	195-5	33	.....	.....	Not stated
William Kennedy	W. Goodspeed, Conn.	1864	Wood	195	33	275	.....	\$186,000
William Lawrence*	Atlantic Works, Boston	1869	Iron	226	35	425	185,000	.....
Blackstone	G. Greenman & Co., Conn.	1863	Wood	179	34-6	.....	.....	70,000
William Crane	Harlan & Hollingsworth	1871	Iron	240	37-8	1100	251,000	.....
Johns Hopkins	Harlan & Hollingsworth	1873	Iron	243-3	38	.....	265,000	.....
Saragossa	Philadelphia	1863	Wood	211-9	31-5	.....	.....	Not stated
America	S. Gillingham Co., Conn.	1863	Wood	166	31	.....	.....	Not stated
Decatur H. Miller	Harlan & Hollingsworth	1879	Iron	265	38-6	1100	228,000	.....
Alleghany	Wm. Cramp & Sons	1881	Iron	266	38-5	1500	246,000	.....
Berkshire	Wm. Cramp & Sons	1881	Iron	266	38-5	1500	248,000	.....
Chatham	American S. B. Co., Phila.	1884	Iron	285	40	1900	304,000	.....
Dorchester	Harlan & Hollingsworth	1889	Iron	282	40	2000	276,000	.....
Essex**	Wm. Cramp & Sons	1890	Iron	282	40	2000	302,000	.....
Fairfax	Harlan & Hollingsworth	1891	Iron	295	42	.....	386,000	.....
Gloucester**	Maryland Steel Co.	1893	Steel	296	42	2500	343,000	.....
Howard**	Harlan & Hollingsworth	1895	Steel	293	42	2500	317,000	.....
Junia**	Harlan & Hollingsworth	1897	Steel	293	42	2500	325,000	.....
State of Texas	J. Roach & Sons	1874	Iron	243-6	36	.....	.....	55,000
Kershaw**	Harlan & Hollingsworth	1899	Steel	298	42	3000	360,000	.....
Nantucket**	Harlan & Hollingsworth	1899	Steel	298	42	3000	343,000	.....
New Orleans	Pusey & Jones	1872	Iron	249	33	1000	.....	69,000
Hudson	Pusey & Jones	1874	Iron	301	34	1200	.....	95,000
Powhatan	J. Roach & Sons	1894	Steel	321	40	3000	.....	224,000
Lexington	J. Roach & Sons	1877	Iron	272	38-7	1800	.....	133,000
Ontario**	New York S. B. Co.	1904	Steel	315	42	3500	409,000	.....
Aries	Sunderland, England	1862	Iron	210	27-6	.....	.....	Not stated
Creton	J. Roach & Sons	1882	Iron	287	40-5	1800	.....	Not stated
Persian**	J. Roach & Sons	1882	Iron	311-7	40-7	1800	.....	Not stated
Parthian	Harlan & Hollingsworth	1887	Iron	289	38	1500	.....	Not stated
Indian**	Harlan & Hollingsworth	1890	Iron	289-5	38	1500	.....	Not stated
Grecian**	Harlan & Hollingsworth	1900	Steel	290	42	2800	.....	Not stated
Tuscan**	Maryland Steel Co.	1907	Steel	290	42	3000	.....	Not stated
Quantico**	J. Roach & Sons	1882	Iron	311-7	40-9	2400	.....	185,000
Tug Apollo**	Jas. Clark, Baltimore	1895	Wood	90-2	19-8	.....	.....	.....
Tug Mary**	Jas. Clark, Baltimore	1896	Wood	81-7	18-8	.....	.....	.....
Tug Venus**	Jas. Clark, Baltimore	1893	Wood	71-7	17-8	.....	.....	.....

Note:—*First steamer owned by the company to have a surface condenser. **Vessels still owned by the company and in active service January 1927. ***Side wheelers, all others screw propelled. For eighteen years following the building of S.S. Ontario in 1904 the company built no new vessels. Then in 1922 the two fine passenger and cargo vessels Berkshire and Alleghany, 368 feet in length, 52 feet beam with 2700 horsepower were contracted for with the Federal Shipbuilding & Drydock

Co. at Kearny, N. J. These two vessels were completed early in 1923 at an approximate cost for the two of \$1,700,000.

In 1925, three similar vessels though with greatly increased passenger capacity and other improvements were ordered from Newport News Shipbuilding & Drydock Co. at an approximate total cost of \$3,600,000. They are named the Chatham, Dorchester and Fairfax and entered service during the early summer and fall of 1926.

In December 1925 the company bought three freight ships of the "Lake" type from the United States Shipping Board. These vessels were reconditioned and made suitable for the company's trade at a total cost, including purchase price, of \$75,000 per ship. Later still another "Lake" type shipping board freight vessel was acquired, so that the present fleet consists of 20 vessels as shown in detail in Table II on page 16.

their construction the finest workmanship and incorporate in every detail the long experience of the management in providing for the safety, comfort and recreation of passengers. Each of these vessels carries nearly 100 more passengers than the ALLEGHANY or BERKSHIRE and they are also more elaborate in other respects. They are single screw, oil burning ships, of steel construction on the Isherwood system of framing, 368 feet in length, 52 feet in beam, 36 feet deep to the hurricane deck, with a load displacement at 19 feet draft 6930 tons. A detailed account with outboard profile was published in the April 1926 issue of MARINE REVIEW. Of combination passenger and freight type with all cargo handled through side ports these vessels were built under special survey to the highest class of the American Bureau of Shipping for hull, machinery and equipment.

Accommodations are provided for 302 first class, 12 steerage and a crew of 88. Propulsion is by means of a single screw driven by a four-cylinder triple expansion engine of 2700 indicated horsepower, with four scotch boilers burning oil supplying steam. A cargo of 3300 tons can be carried at a mean draft of 19 feet. Loading and unloading is done through seven cargo ports in each side of the vessel. There are six decks, orlop, lower, main, hurricane, promenade and boat deck, the last three being used for accommodation of passengers and crew.

Officials

January, 1927

Merchants & Miners Transportation Co.

President and General Manager
A. D. Stebbins

First Vice President

F. G. Boyce Jr., Baltimore

Second Vice President

E. P. Whitney, Boston

General Counsel

T. H. Swank, Baltimore

Secretary and Treasurer

W. Wadsworth, Baltimore

Superintendent of Transportation

D. R. McNeill, Baltimore

Assistant to President

C. D. Swank, Baltimore

Directors

Baltimore

A. D. Stebbins; F. G. Boyce Jr.; D. H. Miller, Jr.; R. Brent Keyser; W. K. Cromwell.

From Other Cities

E. P. Whitney, Boston; W. B. Brooks, A. H. S. Post, Stevenson, Md.; E. W. Lane, Jacksonville, Fla.; E. R. Tinker Jr., New York

Officials at Baltimore

T. W. Kennedy, auditor; T. H. Penn, general passenger agent; J. B. Sweeny, general traffic manager; H. P. Wilmer, general freight agent; H. M. Cornwall, superintendent Baltimore division; James Barry, general claim agent; T. F. Lips, special agent; A. Cradock, purchasing agent; W. S. Wainwright, supervising steward; W. W. Tull, general agent.

Officials at Other Cities

John Leigh, superintendent, Philadelphia, division; A. L. Bongartz, general agent; A. W. Graves, assistant general freight agent, at Philadelphia; C. H. Maynard, general agent, Boston; Wm. H. Miller, general agent, Providence, R. I.; A. E. Porter, general agent, Norfolk, Va.; H. C. Jones, agent, Newport News, Va.; R. M. Girffin, general agent, Savannah, Ga.; C. M. Haile, general agent, Jacksonville, Fla.; R. W. Parker, agent, Miami, Fla.; R. T. Merrill, agent, West Palm Beach, Fla.

There are four suites with private baths on each ship just forward of midships, 30 rooms with beds, 98 double berth rooms, and 8 single berth rooms. Each stateroom is fitted with running hot and cold fresh water. An intercommunicating telephone system with telephones in each stateroom connected to a central switchboard operated by an attendant, has been installed. The telephone equipment, of the most modern type and the first of its kind installed on shipboard using telephones with European type of hand sets consisting of both receiver and transmitter attached to a common bar, was furnished by Chas. Cory & Son, Inc. Three rooms have private tub baths and 16 are equipped with showers. These baths have hot and cold fresh, and also hot and cold salt running water. The staterooms are well ventilated and of comfortable size. Most of the rooms have two doors, one opening on deck and one to the corridor.

A berth light, thermos bottle and electric fan is installed in each room. Ice water fountains are located conveniently throughout the passenger spaces of the ship. Staterooms have large rectangular shaped windows, developed by the Kearfott Engineering Co., which operate up and down in felt lined grooves by means of cranking a lever on the same principal as an automobile window. The felt lined grooves eliminate the annoying rattle often experienced with windows on board ship.



PASSENGER ACCOMMODATIONS ON OLDER VESSELS—AT LEFT—STATEROOM ON S. S. ONTARIO—AT RIGHT—STATEROOM AND BATH ON THE HOWARD—TYPICAL ALSO OF THE GLOUCESTER AND JUNIATA



AIRPLANE VIEW OF THE BALTIMORE TERMINAL OF THE MERCHANTS & MINERS TRANSPORTATION CO.—TWO COVERED PIERS WITH ROADWAY BETWEEN IN MIDDLE FOREGROUND

The old fashioned ships galley has been improved upon by installing a large and complete kitchen as shown in an accompanying illustration. The oven is equal to that in the best hotels or on Atlantic liners. All the latest labor saving, steam and electrically operated equipment has been installed. Pantry and galley have been combined into one up-to-date kitchen.

The public rooms consisting of dining room, music room, smoking room, lounge, writing room, social hall, dance pavilion and sun parlor are spacious, attractively furnished and appointed in simple good taste. These ships differ somewhat in construction from the ALLEGHANY and BERKSHIRE in that the dining room is located on the main deck which allows additional

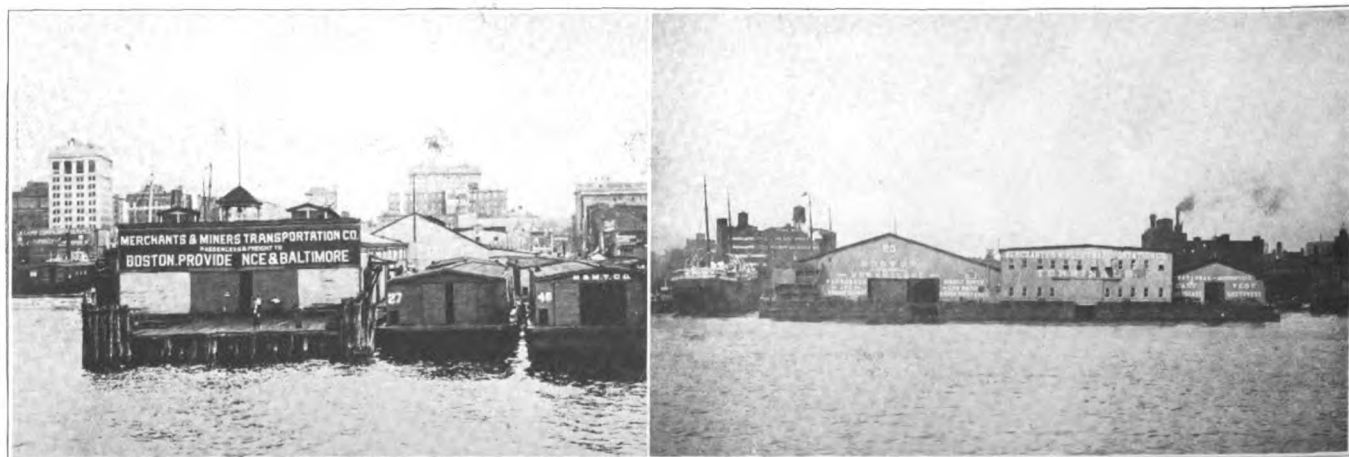
space on the upper decks for state-rooms. Large window, not port holes, are fitted in the sides of the vessel in way of the dining room. In very bad weather the window openings can be closed off by heavy watertight hinged and dogged steel shutters.

The perfection of material and finish indicates the highest class of skilled workmanship and is a credit to the builders. The furnishings, lighting, draperies and color tones throughout the ship are conducive to rest, comfort and luxury. There is also a fully equipped barber shop and magazine stand. Some conception of these ships, their public rooms and staterooms may be had from the accompanying illustrations. An outstanding feature is the abundance of deck space. Three decks are

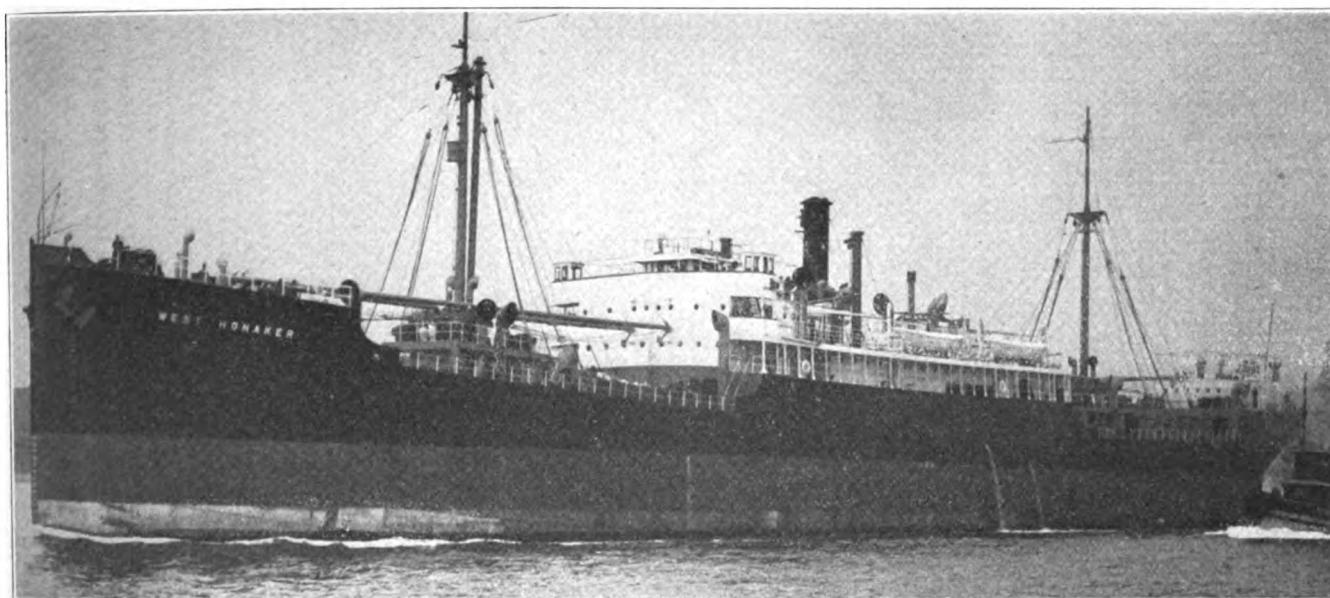
available for passengers, two promenade decks and one top or boat deck.

The comfort and entertainment of passengers is one of the outstanding features of these ships. A public address and radio reception system has been installed whereby music from the ship's own orchestra may be broadcast from the music room to the dining room, social hall and dance pavilion or to any one of these spaces separately. Over the same system radio programs may be received from any shore station and then broadcasted throughout the ship. The dancing pavilion has a polished maple floor and music is furnished by either the ship's orchestra or the electric orthophonic victrola. In fact the entire vessel with its social hall, music room,

(Continued on Page 60)



TERMINALS—OWNED BY THE MERCHANT & MINERS TRANSPORTATION CO.—AT LEFT—PIER, FOOT OF WEST MAIN STREET, NORFOLK, VA.—AT RIGHT—PIERS 18 AND 20 SOUTH DELAWARE AVENUE, PHILADELPHIA



M. S. WEST HONAKER—McIntosh & Seymour engine—Conversion at Fore River plant Bethlehem Shipbuilding Corp.

M. S. West Honaker Is Given Successful Sea Trials

BY H. R. SIMONDS

THE second vessel of the diesel conversion program of the United States shipping board was immediately placed in service after successfully competing tests outside of Boston harbor on Nov. 29, 1926. This ship, the WEST HONAKER, a single screw freight vessel of approximately 8000 tons deadweight, is the first vessel in this program to leave the Fore river plant of the Bethlehem Shipbuilding Corp. Ltd. Two sister ships, the WEST CUSSETA and the CROWN CITY, are now at the Fore river plant undergoing a similar conversion to diesel engine drive. The general characteristics of the WEST HONAKER are shown in Table 1. The WEST HONAKER proceeded to East

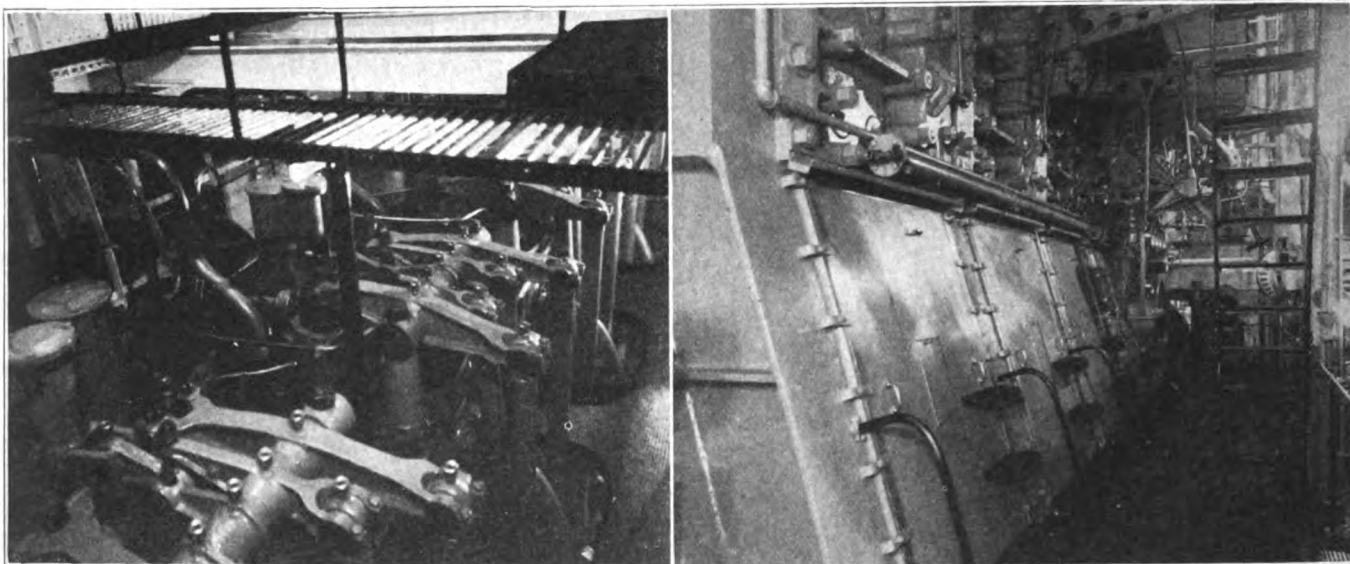
Boston for the start of her official trial. More than 100 guests were taken aboard including representatives of the shipping board, the Bethlehem Shipbuilding Corp. Ltd., the McIntosh & Seymour Corp., and

of all the other companies which furnished major equipment.

The trials included a six hour run at full power, anchor tests, steering tests, a run at full speed astern, a run on emergency conditions using auxiliary compressors, and maneuvering and starting tests. After a slight difficulty at the start, due to an air pocket in the governor oil system, everything ran smoothly, and fully up to the expectations of the engine builder and the shipping board officials. The speed attained was something over 12 knots an hour. The handling of the vessel in the figure eight test, the operation of the automatic steerer and the flexibility of control, all worked out well. The main engine



OFFICERS OF THE M. S. WEST HONAKER—CAPT. EDWARD B. LAMBERT; FIRST OFFICER W. L. POOLE; SECOND OFFICER C. P. COLEMAN; THIRD OFFICER L. F. HARRINGTON; CHIEF ENGINEER J. BROWN; FIRST ASST. ENGINEER C. T. KLIEN; SECOND ASST. ENGINEER A. F. CHAMPNEY; THIRD ASST. ENGINEER D. S. DONNELLY; FOURTH ASST. ENGINEER E. S. BOWEN



M. S. WEST HONAKER—Main engine, McIntosh & Seymour—At left, top of engine showing valve operating mechanism—At right, view of main engine room looking aft from port side forward end of engine room

was started fifteen times from one compressed air tank. As the equipment includes two such tanks the stored supply of air would be enough to start the engine thirty times. Other results of the trial such as oil consumption and temperatures are shown in Table 2.

After the test the WEST HONAKER returned to the army supply base pier at Boston, where complete satisfaction at her performance was expressed by the shipping board officials. The next day, Nov. 30, the vessel left for Savannah to enter the transatlantic service.

The weather on the day of the trial was perfect, and many of those on board spent a large part of the time walking about on deck without their overcoats. Luncheon was served on board to guests and observers. The test was conducted with Capt. Edward B. Lambert of Machias, Me., and Capt. Joseph Kemp of the Fore river plant on the bridge.

Diesel Engine is Unique

The conversion of the WEST HONAKER from steam to diesel drive and her immediate entry into regular service is an important step in the attempt to build up an American merchant marine. The WEST HONAKER's main engine, a 6-cylinder, 4-cycle, single acting diesel engine of 2700-horsepower, is the largest single acting American marine diesel engine ever built, and is one of the largest all American diesel engines of any type.

The vessel is of the conventional three island type with poop, bridge, and forecastle. Quarters for passengers and officers are located in the midship house as are the galley and dining rooms. The staterooms

throughout are large, airy and comfortable, special attention having been paid to ventilation and insulation from heat so that these rooms will give maximum comfort even under tropical conditions. The staterooms are fin-

of all the ships which are now being converted to diesel drive under the direction of the shipping board is the extensive use of electricity for operating all deck and engine room auxiliaries, heaters, and other miscellaneous equipment. On the WEST HONAKER the electrical equipment includes a 2-ton York ice machine direct driven by a Diehl motor, a Sperry-Westinghouse automatic or hand controlled steering gear, eleven winches, windlass, radio equipment, a 5-gallon coffee urn, and several smaller ones, a 100-gallon water heater and several smaller ones, electric radiators, whistle, and a 1000-watt searchlight.

Index for 1926

The index for the year 1926 covering all of the valuable editorial material which appeared in MARINE REVIEW last year is now ready for distribution. Copies will be sent on request, without charge, to those subscribers who have kept a complete file of copies and desire the index for reference.

ished in white enamel with teak and mahogany trim, and are all fitted with modern steel beds and latest type of marine plumbing.

The vessel is profusely electric lighted throughout. One of the features

Auxiliary Diesel Engines

In addition to the main diesel engine, which was furnished by the McIntosh & Seymour Corp., the vessel carries several auxiliary diesel engines also made by this company. These include a 4-cylinder 4-cycle engine of 400-horsepower driving a three stage air compressor and a 75-kilowatt generator, and two 2-cylinder 4-cycle diesel engines, each of 108-horsepower and each direct connected to a 75-kilowatt generator.

The fuel oil for all purposes is carried in double bottom tanks in sufficient quantity to give a cruising radius of 20,000 miles. A small emergency lighting and compressor set has been provided. This consists of a 22-horsepower Mianus diesel engine driving a 14-kilowatt generator and a Rix compressor. A detailed list of equipment is given in Table 3.

The Shipping Board Program

There is approximately \$25,000,000 available for carrying out the shipping board's program of conversion of vessels from steam to diesel power. The TAMPA, reconditioned at New-

TABLE I

General Characteristics Of Vessel

Length over all, feet, in.....	423 9
Length B. P. P. A. B. S., feet, in.	410 0
Beam molded feet, in.....	54 0
Depth molded at side to shelter deck, feet, in.....	29 9
Displacement at normal mean load draft, tons.....	12,086
Gross tonnage	5,424
Net tonnage	3,372
Normal mean load draft, feet, in.	23 11¼
Deadweight carrying capacity on above draft, appr., tons	8,000
Grain capacity cu. ft. exclusive of forecastle poop cargo space 2nd deck.....	386,449
Bale capacity cu. ft. exclusive of same space	349,674
Capacity of deep tanks salt water, tons	674
Capacity of inner bottom fuel oil tanks, tons	952
Normal speed service conditions, knots	11

port News, was put in service on Nov. 9, 1926 after a successful sea trial, a complete account of which is given in the December 1926 issue of MARINE REVIEW. The UNICOI is now under conversion at New port News, and will probably be the third of the program to go into service. Both of the latter have double acting diesel engines made by the Worthington Pump & Machinery Corp. The SAWOKLA and the CITY OF RAYVILLE, also being converted at Newport News, are to have Busch-Sulzer Bros. single acting diesel engines.

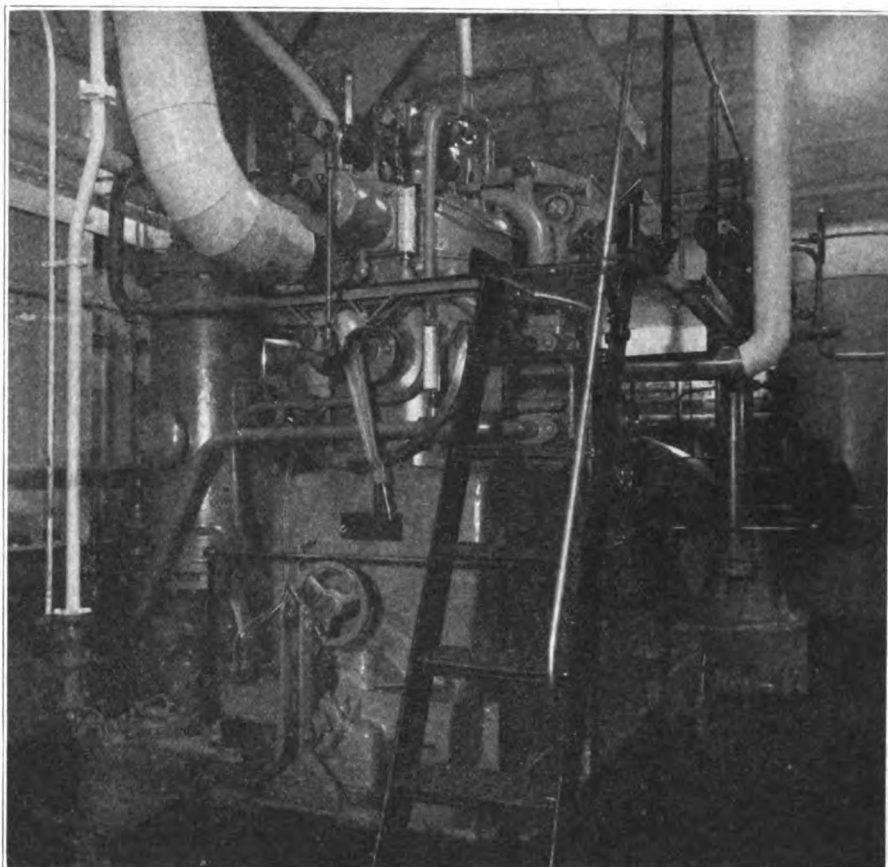
The WEST CUSSETA and the CROWN CITY now under conversion at the

TABLE II
M. S. West Honaker

Oil Consumption And Temperatures During Six Hour Sea Trial

	At start	At end
Engine room temperature, F°	56	66
Temperature at upper grating	62	74
Barometer reading	30.1	30.2
Temperature of cooling water discharged from jackets	52	128
Temperature of water in piston cooling system	70	96
Lubricating oil pressure, lbs.	9.5	12.25
Injector air pressure in lbs. per square inch	900	925
Exhaust temperature, F°	575	665
Revolution counter index at 10:35 a. m.—9,999,474.		
Revolution counter index at 2:05 p. m.—10,019,545.		
Fuel oil reading at 10:35 a. m.—1,521.5 gallons.		
Fuel oil reading at 2:05 p. m.—1,007.5 gallons.		
Average speed from 10:35 a. m. to 2:05 p. m.—12.01 knots.		

Fore river plant of the Bethlehem Shipbuilding Corp. are being equipped with McIntosh & Seymour diesel engines. The WEST CUSSETA will probably go into service early in January and the CROWN CITY about the first



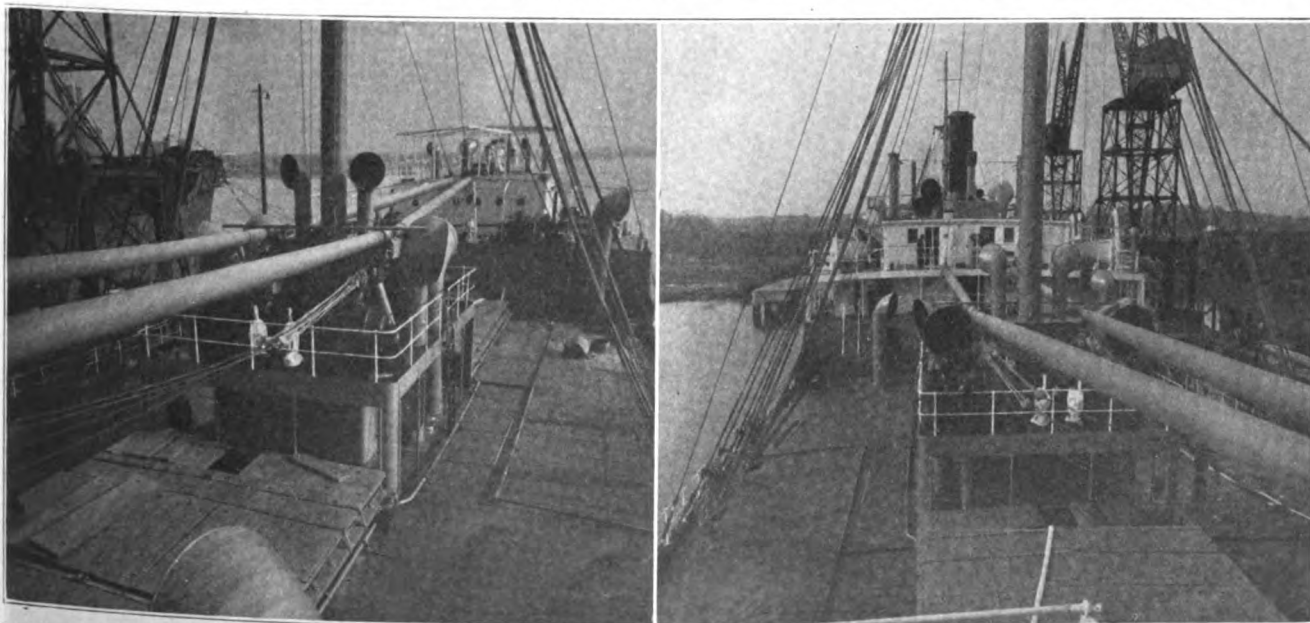
M. S. WEST HONAKER—ONE OF THE TWO AUXILIARY DIESEL ENGINE GENERATING SETS—A 2-CYLINDER, 4-CYCLE 108-BRAKE HORSEPOWER AT 275 REVOLUTIONS PER MINUTE. McINTOSH & SEYMOUR DIESEL ENGINE DRIVING A 75-KILOWATT, 240-VOLT DIRECT CURRENT GENERATOR

of March. Other vessels on the program are: WILSCOX, YOMACHICHI, SEMINOLE, CITY OF DALHART, and WEST GRAMA.

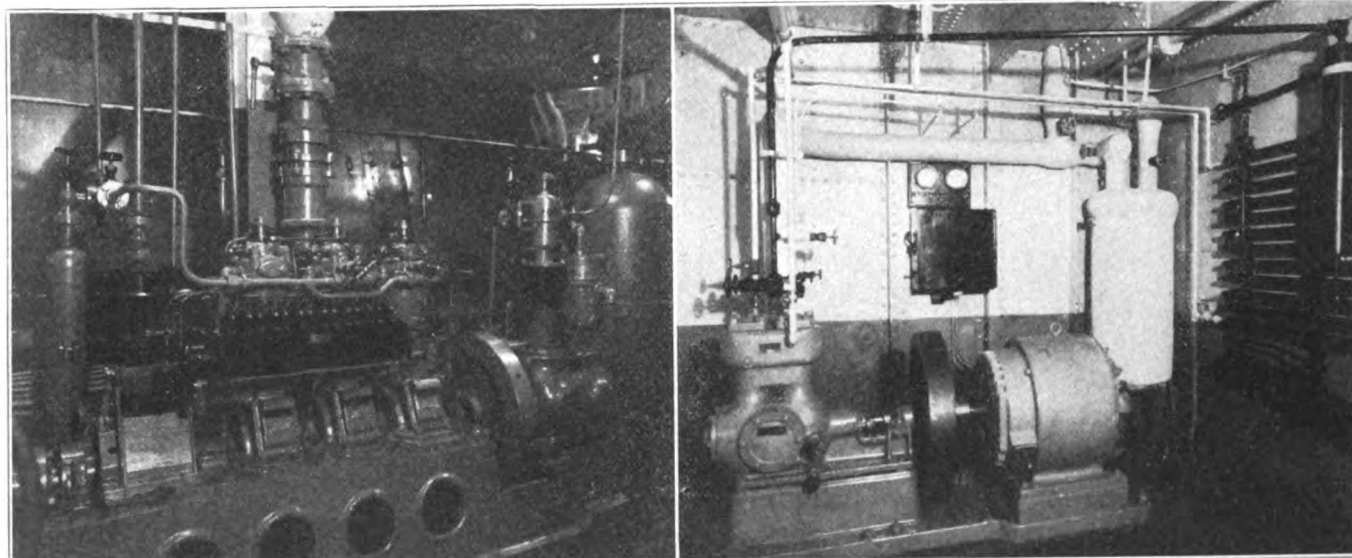
Vessel's Speed Is Improved

The WEST HONAKER was built in 1920 by the Los Angeles Shipbuilding Co. at San Pedro, Calif. She was originally powered with a triple ex-

pansion steam engine and water tube boilers burning fuel oil. With this power plant she attained a speed of 10½ knots while the estimated speed loaded, with the diesel power plant is 11½ knots. The speed actually observed, light on the trial trip was over 12 knots. Itemized cost of converting the WEST HONAKER is shown



M. S. WEST HONAKER—At left—looking aft showing winch platform and winches serving hatches 4 and 5. At right—looking aft from fore castle showing winch platform and winches (two for each hatch) serving hatches 1 and 2



M. S. WEST HONAKER—At left—Emergency lighting compressor set operated by a Mianus diesel engine—At right—Two-ton York, ammonia refrigerating machine operated by a Diehl electric motor at 235 revolutions per minute

in Table III on this page.

Saving in fuel cost over the original steam drive is of course the outstanding advantage of the diesel installation. The direct saving in fuel cost, however, is not the only advantage of the diesel engine. The diesel engine vessel has a somewhat increased cargo capacity, increased fuel storage capacity, with a very greatly increased steaming radius and decreased personnel. In addition many less well defined claims are made such as greater reliability, lower maintenance cost, greater flexibility, and stopping of fuel consumption when engine stops, which is not true of a steam engine.

In an actual case of a vessel similar to the WEST HONAKER, tests were made first with the steam engine and oil fired boilers, next with diesel

main engine and steam driven auxiliaries, and third with diesel main engine and diesel auxiliaries. In the

TABLE III

West Honaker Conversion Costs	
Installation	\$265,090
Special alterations	137,410
Main engine, including spares.....	228,550
Deck machinery, including steering gear, motors, control and cable	29,320
Engine room auxiliaries, including engines, generators, pumps, coolers, switchboard, cable.....	68,000
Repairs	26,200
Equipment and outfit	25,000
Engineering, purchasing, inspection, traveling, freight, extras, trial trip and incidentals.....	22,000
Total	\$801,570

first case one cent's worth of fuel transported one ton of cargo 43 miles; in the second case one cent's worth of

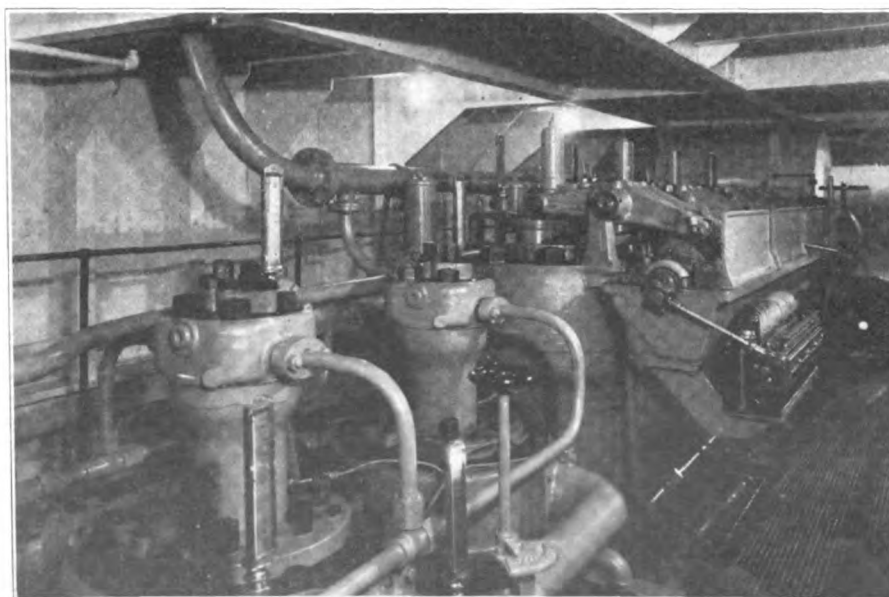
fuel transported one ton of cargo 96 miles, and in the third case, which is the case similar to the converted WEST HONAKER, one cent's worth of fuel transported one ton of cargo 163 miles.

During three hours and a half on the full speed run when figures were taken for the fuel oil consumption, the total was 514 gallons which is approximately 147 gallons an hour, or for the distance covered at the rate of 14.3 gallons per mile. For this same period the revolution counter showed 20,071 or approximately 40 revolutions to a gallon of oil.

West Honaker's Equipment

The WEST HONAKER has accommodations for 14 passengers, with complete service, in line with modern shipping practice. The galley equipment includes a modern oil burning range and an electric refrigerator. The passenger accommodations are on the bridge deck where also are located the dining room, the gyro-compass room, chief engineer's quarters, and rooms for the other engineers, electrician, motorman, stewards and others. On this deck also are the galley, radio room and hospital.

The main engine has six cylinders each 32 inches in diameter with 60-inch stroke. The engine drives the shaft which carries a four bladed built up bronze propeller. This propeller is 17 feet in diameter and has a pitch of 13 feet 6 inches. The thrust of the propeller is taken up by a Kingsbury thrust bearing. All of the diesel units are cooled with salt water. The speed of the main engine is 95 revolutions per minute and of the 400-horsepower compressor unit is 200 revolutions per minute. The two auxiliary engines have a speed of



M. S. WEST HONAKER—INDEPENDENT COMPRESSOR UNIT—A 400 BRAKE HORSE-POWER 4-CYLINDER McINTOSH & SEYMOUR 4-CYCLE SINGLE ACTING DIESEL ENGINE OPERATES THE COMPRESSOR AND ALSO A 75-KILOWATT GENERATOR

TABLE IV

Main Engine and Auxiliaries on M. S. West Honaker

Main Engines

Make: McIntosh & Seymour Corp.
Type: Single acting; 4-cycle; air injection; with independent compressor.
Diameter of working cylinders, inches: 32.
Stroke, inches: 60.
Number of cylinders: 6.
Brake horsepower: 2700.
Revolutions per minute: 95.
Piston speed, feet per minute: 950.
Fuel nozzles: 1 per cylinder.
Two air starting tanks: capacity 550 cubic feet each.
Two air starting tanks: maximum working pressure 400 pounds.
Cooling: Salt water throughout.
Maxim silencer.

One Independent Compressor Unit
Make: McIntosh & Seymour Corp.
Type: Single acting; 4-cycle; air injection.
Diameter of working cylinders, inches: 17.
Stroke, inches: 24.
Number of cylinders: 4.
Brake horsepower: 400.
Revolutions per minute: 200.
Piston speed, feet per minute: 800.
Cooling: Salt water.
Generator: 75-kilowatt, 240 volts.
Maxim silencer.

Auxiliary Engines

Make: McIntosh & Seymour Corp.
Type: Single acting; 4-cycle; air injection.
Diameter of working cylinder, inches: 13½.
Stroke, inches: 18.
Number of cylinders: 2.
Brake horsepower: 108.
Revolutions per minute: 275.
Piston speed, feet per minute: 825.
Cooling: Salt water.
Generator: 75-kilowatt, 240 volts.
Excess air capacity, cubic feet each: 170.
Maxim silencer.
Emergency Light and Compressor Set
Make: Mianus diesel engine.
Type: Single acting; 2-cycle; solid injection.
Diameter of working cylinders, inches: 5 5/16.
Stroke, inches: 7¼.
Number of cylinders: 3.
Brake horsepower: 22.
Revolutions per minute: 550.
Piston speed, feet per minute: 653.
Cooling: salt water.
Generator: 14-kilowatt, Diehl.
Rix compressor.
Maxim silencer.

Pumps, Water

Manufacturer: Nash Engineering Co.
Salt water cooling: One 750 gallons per minute, self-priming, centrifugal, motor drive, General Electric, 30-horsepower.
Fire: One 200 gallons per minute centrifugal, motor 20-horsepower.
Engine room bilge: One 300 gallons per minute, self-priming centrifugal—motor General Electric 7½-horsepower.
Fresh water: (washing) One 70 gallons per minute, self-priming centrifugal—motor General Electric 7½-horsepower.
Sanitary: One 70 gallons per minute cen-

trifugal—motor General Electric 7½ horsepower.
Fresh water: (potable) One 35 gallons per minute centrifugal—motor General Electric 1½-horsepower.

Pumps, Oil

Manufacturer: Kinney Mfg. Co.
Lubricating oil: Two rotary plunger, 150 gallons per minute—motor, General Electric 7½-horsepower.
Fuel oil transfer: One rotary plunger, 150 gallons per minute—motor General Electric 7½-horsepower.

Boiler

Vertical type, working pressure 110-pound gage—173 square feet heating surface.

Oil burner—Sunbeam centrifugal atomizer.

Ice Machine

York, 2-ton, ammonia direct expansion type, direct driven by Diehl motor, 235 revolutions per minute.

Propeller

Four-bladed built up type, bronze. Diameter 17 feet 0 inches, pitch 13 feet 6 inches.

Steering Control

Sperry telemotor—Westinghouse control panel—automatic, hand with automatic followup, hand, non-followup.

Winches

10 cargo—1 warping—Lidgerwood Mfg. Co., self-oiling, special design—electric-driven, Westinghouse motor and control—improved cam type controller.
Winches fitted with Cutler-Hammer shoe brakes.

Windlass

Rebuilt for motor drive. Westinghouse 45-horsepower motor and control panel Cutler-Hammer shoe brake.

Fire Extinguisher System

Walter Kidde Co. Lux system, eighty 50-pound cylinders for CO₂, 24-Hand CO₂ containers, fire main (water).

Radio

Equipment installed by Independent Wireless Co.

Galley

Range: New York French Range Co., oil fired, fitted with Ray burner.
Coffee urn and water boiler. Electric—Automatic Electric Heater Co. Radiant type, specially designed—4.5 kilowatts.
Capacities: Coffee, 5 gallons, water, 14 gallons.
Hot water heaters: Main, Automatic Electric Heater Co., 4.5 kilowatts—100 gallons. Crew, Automatic Electric Heater Co. 1.5 kilowatts—15 gallons. Radiator in carpenter shop—electric—1 kilowatt.

Whistle

Sperry—Visible type.

Oil Separators

Manufactured by Sharples Specialty Co.: Two for fuel oil, 300 gallons per hour of pressure type. One for lubricating oil, 150 gallons per hour of open type.

Crane

Eight-ton traveling crane made by the Brown Hoisting Machinery Co.

Shipbuilding Is Active on Great Lakes

Eight large bulk freighters are at present under construction in shipyards of the Great Lakes. All of these vessels are for delivery next season, four at least, for the opening of the season.

The Great Lakes Engineering Works have under construction one 600-foot freighter for the Pittsburgh Steamship Co. ordered Nov. 12, last year. This freighter will be similar to the RICHARD V. LINDABURY and JOSHUA A. HATFIELD, built in 1923. She will be 600 feet in length over all, 580 feet in length of keel, 60 feet in beam and 32 feet deep. The power will be one triple expansion engine and scotch boilers burning coal.

A vessel similar to the one described above was ordered from the Toledo Shipbuilding Co., Toledo, O. at the same time. These two vessels are expected to be ready early next season.

Six of the total of eight vessels are under construction or will be laid down at the Lorain yard of the American Shipbuilding Co., Lorain, O. Of these six steamers, three are for the Interlake Steamship Co., Pickands, Mather & Co., Cleveland, managers; and one each, for the Kinsman Transit Co., Inland Steamship Co. and Bradley Transportation Co. One of the three steamers for the Interlake Steamship Co., and the last one ordered, will be the largest ore carrier ever constructed for the Great Lakes. The Bradley boat is to be a self-unloader and will have turbo-electric propulsion. She will be similar in many respects to the T. W. ROBINSON, also turboelectric and completed in 1925.

Joins Munson Line

Frank C. Munson, president of the Munson Steamship Lines recently announced the election of Wilson B. Keene, as vice president of the Munson Steamship Lines in charge of the New York-South American freight traffic.

Mr. Keene has been in the shipping business since 1905. Before joining the shipping board he was vice-president of the Savannah New York Transportation Co. His connection with the shipping board began as traffic manager and he was later promoted to vice president in charge of traffic for the Fleet corporation until his resignation last summer. He was the leader of a group who entered a bid for the shipping board's Oriental Mail Line which was ultimately sold to the Dollar interests.

275 revolutions per minute.

Seven motor driven pumps for different uses throughout the ship were manufactured by the Nash Engineering Co. The Kinney Mfg. Co. supplied two motor driven pumps, one for the lubricating oil system and the other for fuel oil. The Lidgerwood Mfg. Co. in conjunction with the Westinghouse Electric & Mfg. Co. designed and built eleven motor driven winches all of which with the rebuilt motor driven windless, are fitted with Cutler-Hammer shoe brakes. The steering control furnished by the Sperry Gyroscope Co. and the Westing-

house Electric & Mfg. Co. is of the latest type combining automatic with hand operation. By means of this control it is possible to automatically hold to a course or at any time to take the helm for hand control. Visible signal operating levers located at each side of the pilot house connect direct with the engine room.

The electric motor driven winches are installed two for each hatch on substantial raised steel platforms with enclosed steel houses underneath for all the electrical controls as they were on the M. S. TAMPA, described in the December number of MARINE REVIEW.

Late Decisions in Maritime Law

Legal Tips for Shipowners and Officers

Specialty Compiled for Marine Review

By Harry Bowne Skillman

Attorney at Law

THAT standing by in a situation of apprehended danger is service of a salvage nature is sufficiently established," said the court in the case of *PENDRAGON CASTLE*, 5 Fed. (2d) 56; "and undoubtedly the lending of men to the vessel in danger for the purpose of jettisoning cargo is even more directly a salvage service; i.e., something 'designed to relieve [the benefited vessel], from some distress or danger either present or to be reasonably apprehended.'"

CAPTAIN of a tug, in permitting a barge to drift while landing another barge when tide was flood, was negligent.—*PANTHER*, 5 Fed. (2d) 64.

COLLISION between vessels riding on anchors in harbor during a strong wind, on failure of one vessel to drop a second anchor or get up steam until about time of the collision, and failure of the other vessel to pay out more than five fathoms of chain when danger of collision became imminent, was held, in the case of *TUNGUS*, 5 Fed. (2d) 66, to be due to the fault of both vessels.

UNITED STATES SHIPPING BOARD EMERGENCY FLEET CORP. cannot escape liability to an injured seaman, under the act of March 4, 1915, as amended, on the theory that it was acting as a public agent, and as such was not liable to suit; and the seaman, having under pain of penalties undertaken dangerous and unnecessary work at the direction of officers of a vessel, was not chargeable with assumption of the risk.—*United States Shipping Board Emergency Fleet Corp. v. O'Shea*, 5 Fed. (2d) 123.

WHERE an alien shipped on a foreign ship under the flag of a foreign nation, the presumption is that his contract was valid under the law of such nation and that it is to be construed thereby: such seaman could not bring an action for wages in a Federal district court, where the vessel was not in a United States harbor.—*Transportes Maritimos Do Estado v. Almeida*, 5 Fed. (2d) 151.

CLAUSE of a contract for transportation of cotton to France, by certain boat, that owing to war conditions shipment is accepted at owner's risk of any interference by any power, excuses the carrier, where the French high commission took all the space on the boat for the benefit of its government, and refused to allow the shipment thereon; the word

"shipment" applying as fully to interference with the shipment accepted but not loaded as with a shipment actually put aboard.—*N. P. Sloan Co. v. Churchill Line*, 5 Fed. (2d) 156.

THE authority of the master of a vessel is not in complete abeyance while a pilot, who is required by law to be accepted, is in discharge of his functions..... A master of a vessel is not without fault in acquiescing in conduct of a pilot which involves apparent and avoidable danger, whether such danger is to the vessel upon which the pilot is, or to another vessel, or persons or property thereon or on shore.—*Jure v. United Fruit Co.*, 6 F. (2d) 6.

UNDER a contract to furnish a staunch and strong boat, the shipper did not assume any risk of unseaworthiness.—*Davis v. Dittmar*, 6 F. (2d) 141.

AVESSEL seized by the United States for forfeiture, for transporting intoxicating liquors on the high seas in violation of her license, it was decided in the case of *LORRAINE RITA*, 6 F. (2d) 175, was not subject to release to a claimant on bond.

THOUGH masters of vessels in New York harbor are chargeable with notice of storm warnings raised upon the Whitehall building, and are prima facie negligent if they do not do so, the fact of a warning is not enough, without more, to constitute negligence. "We cannot agree," said the court in the case of *Bouchard Transportation Co., Inc. v. Pennsylvania Railroad Co.*, 6 F. (2d) 362, "that all work in the harbor must be suspended, for a day out of each week because the winds will blow. Scows must be staunch enough to withstand weather which is of such frequent occurrence. While, then, we do not, of course, mean to ignore the warnings as a circumstance, we decline to make them singly an absolute test. A wind of no more than 30 miles is perhaps not of itself a peril to a well-found scow. . . . In using the weather bureau velocities, one must make some allowance for the place where they are taken."

AVESSEL licensed for coastwise trade, found bringing in a cargo of more than 400 cases of alcohol, was subject to forfeiture for trading outside her license.—*AMRIALD*, 6 F. (2d) 413.

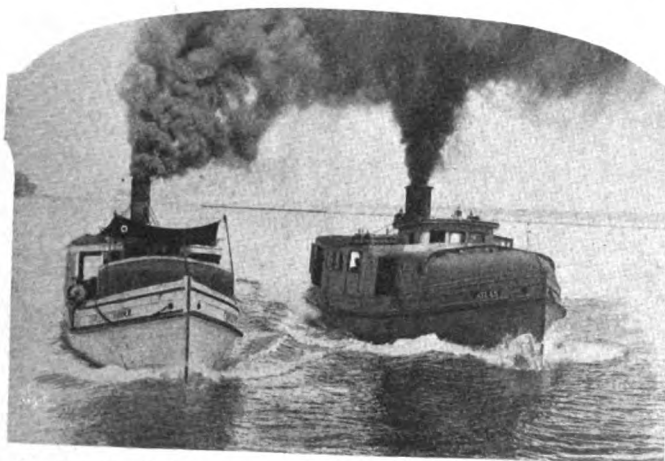
UNDER a provision of a charter party that "time lost through * * * frost * * * that occasions a stoppage of delivery of coal to said steamer is not to be computed as part of the loading time," the charterer was not liable for demurrage because of delay caused by ice which prevented the ship from docking at the loading place, it appearing that neither party was in fault and that the cargo was at all times ready for loading.—*United States v. Kemmerer*, 7 F. (2d) 187.

ALTHOUGH the articles may be wholly silent upon such points, said the court in *Cresci v. Standard Fisheries*, 7 F. (2d) 378, "law and reason imply certain obligations on the part of the master and owner to the mariner, which are equally imperative as those expressed in writing. Among these are the positive duty to accord good treatment to a seaman after he has been injured in the service of the ship, and the duty to supply the ship with food and medicines and to furnish them to the crew during the voyage."

NOT all places on the high seas are foreign to the United States, within section 4337 of the revised statutes, providing for forfeiture of a vessel proceeding on a foreign voyage without giving enrollment and license to the port collector, nor is any point outside the territorial limits of the United States a foreign point, it was held in the case of *ESTHER M. RENDLE*, 7 F. (2d) 545. The court further held that a tug enrolled and licensed for the coasting trade had not "proceeded on a foreign voyage," subjecting her to forfeiture, by towing a lighter from port to a vessel hovering at sea, from which lighter was laden with liquor, and then towing her to port.

BY THE sale of a ticket by a steamship company "there arose a contractual relationship between the company and the passenger, to which relationship," said the court in the case of *Pacific Steamship Co. v. Sutton*, 7 F. (2d) 579, "the law by its own force annexed certain implied obligations and duties to be observed and performed by the parties, respectively, toward each other. The contract of carriage made it the duty of the carrier to carry safely and to protect its passenger from violence and insult committed by its own servants."

Latest Marine News in Pictures



Charles P. Stricker and Atlas characteristic fishing tugs on the Great Lakes, race to port

An 18-inch incandescent type of Sperry searchlight, distantly, electrically operated



Nigalik or Grey Goose plies the Arctic as an independent trader

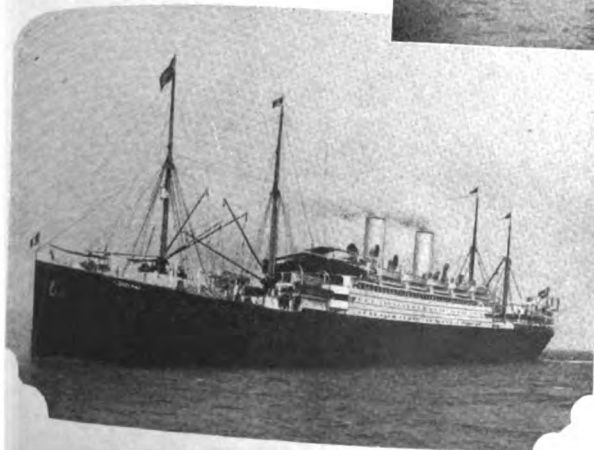


Baron Kysant, head of the Royal Mail, and now after his purchase of the White Star line, appropriately called Lord of the Seven Seas. The company of which he is head controls 538 ships, trading all over the world

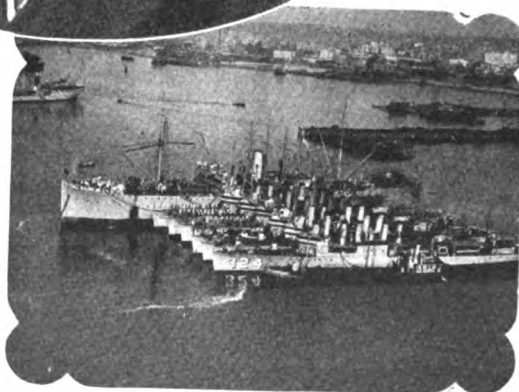


Thirty-eight vessels of 544,000 tons, including the Majestic, were transferred in this transaction for a consideration of \$34,000,000

Cleveland returns to Hamburg American line, original owners. Built at Blohm and Voss, 1909, named for city of Cleveland, she is 589 feet long

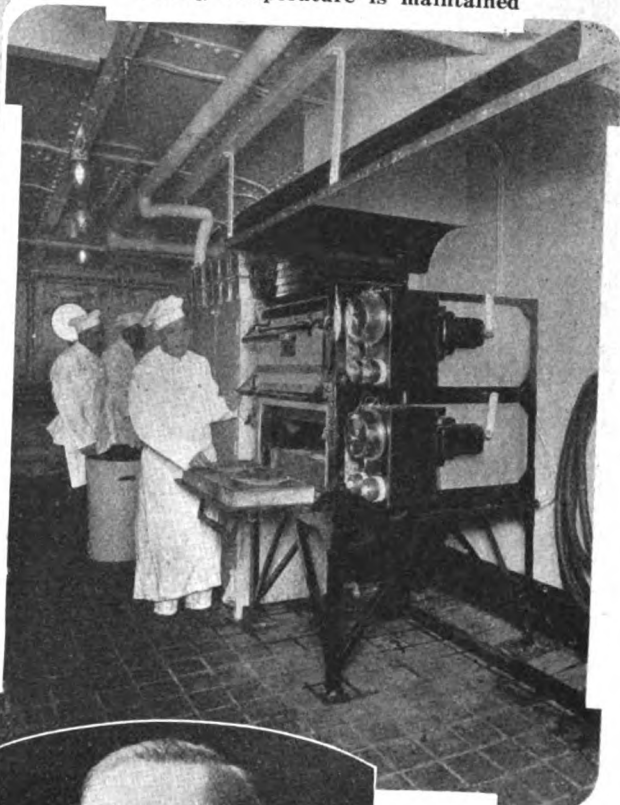


Above—Whaleback, James B. Neilson, on the St. Clair river at Marine City



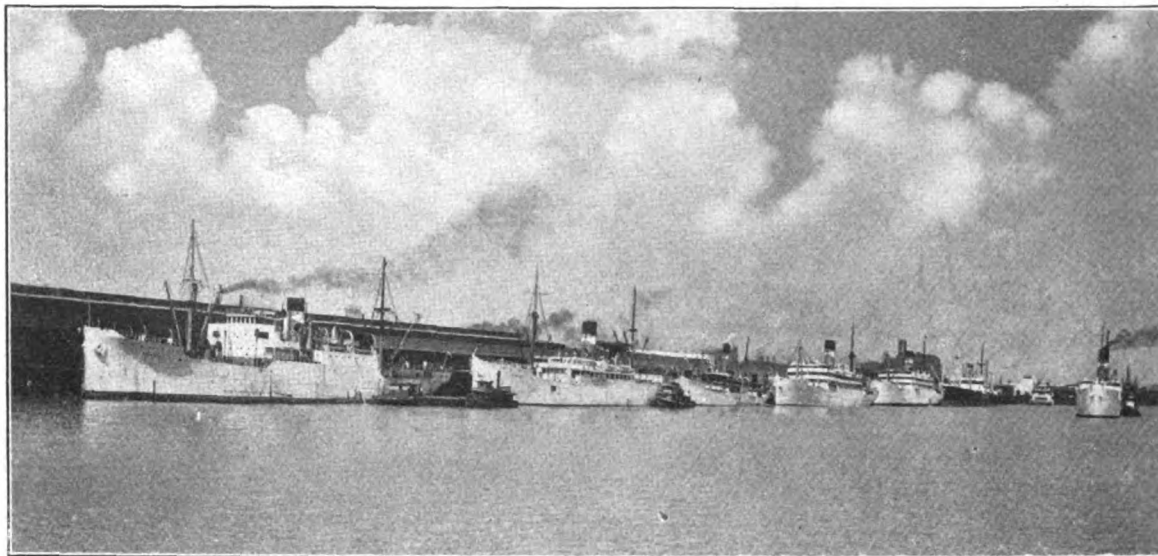
Destroyer tender U. S. S. Melville with destroyers she mothers at naval base of battle fleet on the Pacific. Courtesy of Bastian-Blessing Co.

Electric bake oven on the S. S. Coamo of the New York and Porto Rico Lines. A predetermined baking heat is automatically controlled. Uniform baking temperature is maintained



Dock Management Progress Section

How Successful Dock Operators Have Met
Problems of Giving Best Service to Ships



Ships of the Great White fleet (United Fruit Co.) at public wharves, New Orleans

New Orleans Is Favored by Intelligent Port Development

BY W. SCOTT HAMMOND

THE Mississippi river, rising in Lake Itasca in Minnesota, flows in a southerly direction 2477 miles and empties into the Gulf of Mexico. With its tributaries, it drains an area of 1,240,000 square miles.

"The port of New Orleans is situated on the Mississippi river, 110 miles from its mouth. It has a large, spacious, fresh water harbor, ranging in depth from 30 to 200 feet. It has a frontage of 41.4 miles on the river and more than 10 miles of deep water frontage on the Inner Harbor Navigation canal. There are no tides.

"In tonnage and value of foreign trade, New Orleans ranks as the second port of the nation. It is a two-way port. The health and vigor of the port and its tenacity in growth is shown by the fact that in the late years of depression in foreign trade

the public facilities have handled more tons of cargo than in previous years.

"The board of commissioners of the port of New Orleans, an agency of the state of Louisiana, operates the port. The board is an overlapping, non-political board, comprised of

five members chosen by the governor from the leading business men of the city. The members serve without pay for fixed terms of office. Under the board, the affairs of the port are under the direction of a general manager.

"Nearly one hundred steamship lines had sailings from the port in 1925. Twelve railroad lines spreading fan-shaped into the hinterland, terminate at New Orleans.

"New Orleans, as a port, is fully equipped to trans-ship and store, rail, river and ocean traffic. It is a natural harbor; it is a great railroad terminal; it is the geographical center of the shipping of North and South America."

Thus began the twenty-ninth report of the board of commissioners of the port of New Orleans issued as of Aug. 31, 1925.

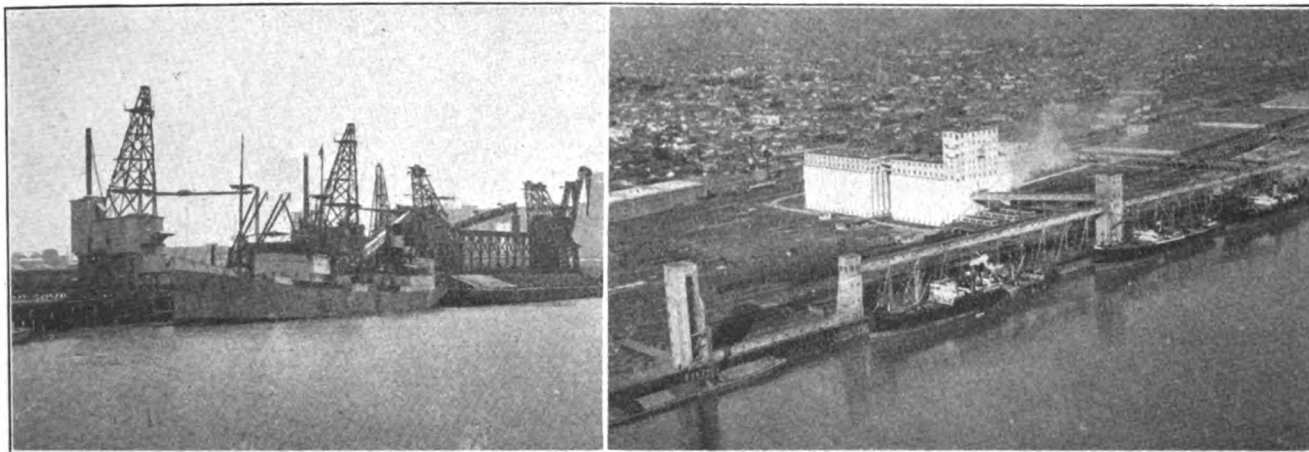
The history of the port of New Orleans from the year 1901 when the board of commissioners of the

Port of New Orleans

Principle Commodities	Quantities
Petroleum, gallons.....	1,324,093,291
Bananas, bunches	21,955,801
Coffee, pounds	342,278,421
Burlap, pounds	139,491,843
Lumber, ft. b. m.	500,000,000
Creosote, gallons	25,557,094
Coal and ore, tons	290,391
Cotton, bales	1,677,851
Grain, bushels	22,835,480
Tobacco, pounds	108,090,061
Sugar, pounds.....	1,388,954,833
Molasses, gallons	136,295,347

Note: Ships to the number of 2857 of a gross tonnage of 8,446,929 called at the port. The value of the foreign trade for one year was \$632,612,826.

The author, W. Scott Hammond is engineer assistant to Marcel Garsaud, general manager, board of commissioners of the port of New Orleans.



NEW ORLEANS—AT LEFT—DOCK BOARD'S PUBLIC COAL AND BULK COMMODITY HANDLING PLANT—AT RIGHT— PUBLIC GRAIN ELEVATOR OWNED AND OPERATED BY THE BOARD OF COMMISSIONERS OF THE PORT

port of New Orleans, acting as an agency of the state of Louisiana, took over the administration of the port from the city, is a succession of triumphs in the cause of advancement and progress.

In the period from 1718 to 1901 such growth as the port enjoyed was the result of no intelligently directed effort. It may be said to have been a development through the accident of geographical location; and such position as New Orleans then occupied among the ports of the world grew out of no effort of her own.

When the first board of commissioners of the port of New Orleans took over the administration of the port from the city of New Orleans

in 1901, it found the public wharves in a poor state of repair. There were no public wharf sheds. The roadways were either not paved or very poorly paved; and the property as a whole was in anything but good order. The first board was without funds and without authority to issue bonds or to borrow money.

Authority to Issue Bonds

It boldly reduced the existing schedule of port charges and within a few months began the reconstruction of the wharves. Within about a year it constructed the first steel shed over a new wharf. The demands for better wharves and for sheds naturally followed rapidly, and as the

board was not in possession of funds in sufficient amount to provide these facilities, and had no authority to issue bonds, the steamship companies volunteered to loan the necessary amounts to the board for the development of their respective berthing places, without interest, refund to be made out of a percentage agreed upon of the port charges collected from the steamship companies using these facilities.

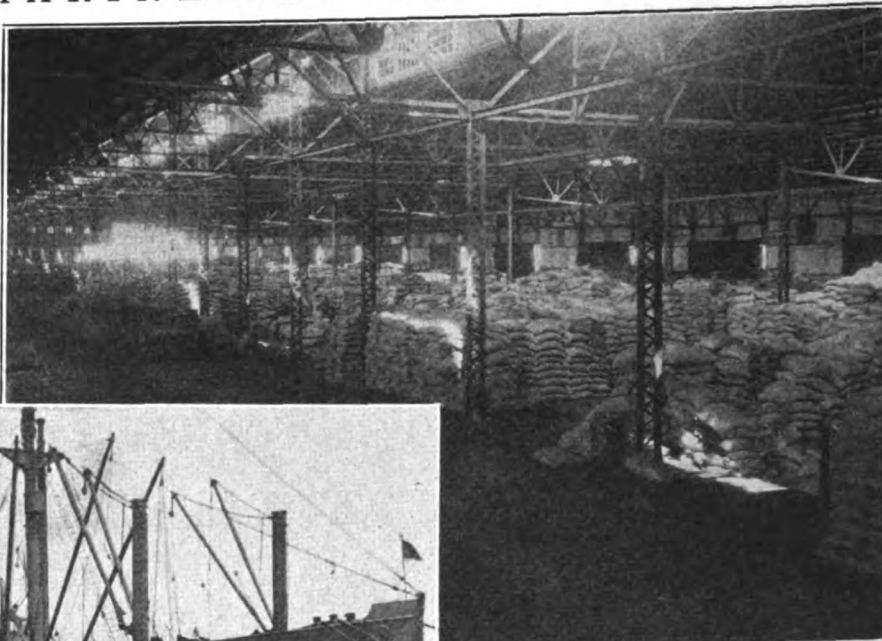
In 1908, before the board had progressed very far with construction under these arrangements, it sought and obtained authority to issue bonds out of the proceeds of which it repaid the loans from the steamship companies; rapidly carried forward



LOOKING DOWN STREAM SHOWING DOCK BOARD'S COAL TIPPLE IN THE FOREGROUND AND IN THE CENTER THE PUBLIC GRAIN ELEVATOR AND COTTON WAREHOUSE OWNED AND OPERATED BY THE BOARD OF COMMISSIONERS OF THE PORT OF NEW ORLEANS

the reconstruction of old wharves and provided for the construction of transit sheds. Marginal roadways were also paved or repaved. With the improvement of existing facilities and the development of new ones, the business of the port expanded and grew, calling constantly for yet other facilities.

In 1914 it became apparent to the board that in addition to the wharves there was urgently needed in this



Coffee in transit shed of public wharves of the New Orleans dock board



Vessels loading cotton at public wharves, New Orleans

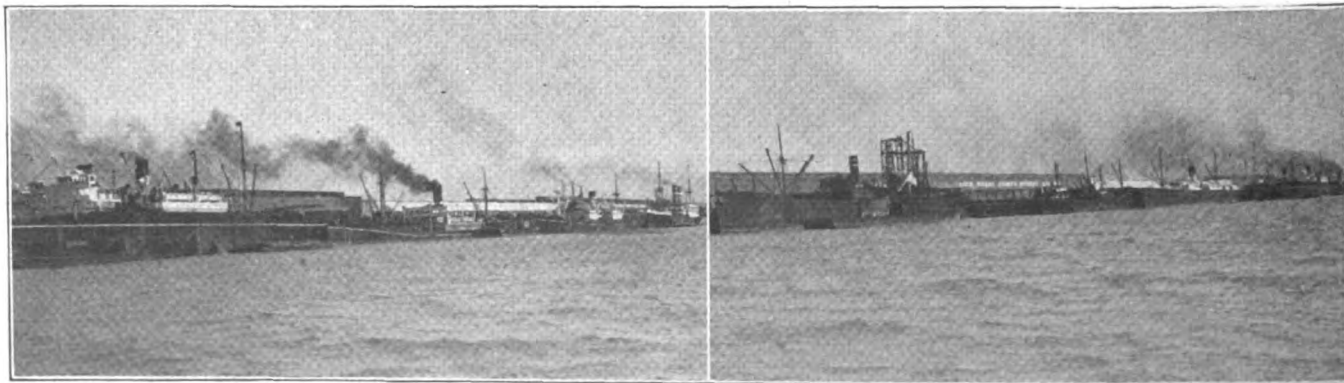
port a large and conveniently located cotton warehouse. The existing cotton warehouses were of poor construction. They were located in many instances at a distance from the river and they were inadequately equipped. The insurance rates were high and the services were unsatisfactory. To finance the building of the cotton warehouse, the board issued in 1914 bonds to the amount of \$3,000,000. Actual construction commenced Jan. 27, 1915. The plans for the warehouses were enlarged and improved as construction progressed. To take

care of these enlargements and improvements, additional bonds were issued from time to time. The board's capital investment at the cotton warehouse, exclusive of real estate, as of July 31, 1926, amounted to \$5,811,767.09. The board's cotton warehouse as it stands today, having a capacity of 420,000 bales of high density cotton, is the largest shipside cotton warehouse in the world. It is built entirely of reinforced concrete and steel; is equipped with three Webb high density presses and mechanical devices for handling cotton.

The entire plant is equipped with sprinklers and enjoys an extremely low insurance rate. The cotton warehouse tariff is low and the services rendered are constantly winning high praise from the cotton trade.

Erect New Grain Elevator

In 1915 the grain interests of New Orleans and elsewhere, not entirely satisfied with the existing facilities for handling export grain in the port urged the dock board to provide better facilities for the storage and handling of export grain. The board always striving to make New Orleans the best equipped and most efficiently operated port available to shippers, issued in 1915 bonds to the amount of \$1,250,000 with which to construct the grain elevator. Construction commenced Oct. 9, 1915. From the start the board's elevator proved to be a great success. The limit of its capacity was soon reached and in a short time it was enlarged. The board's capital investment at the elevator, exclusive of real estate, as



NEW ORLEANS WATERFRONT—VESSELS AT DOCK BOARD'S WHARVES ON RIVER



Steam fire boat DELUGE of the board of commissioners of the port of New Orleans—Largest fire fighting tug in the world—Capacity 14,000 gallons per minute

of July 31, 1926, amounted to \$3,423,013.56.

The board's grain elevator has the reputation of being one of the cleanest and best operated elevators in existence.

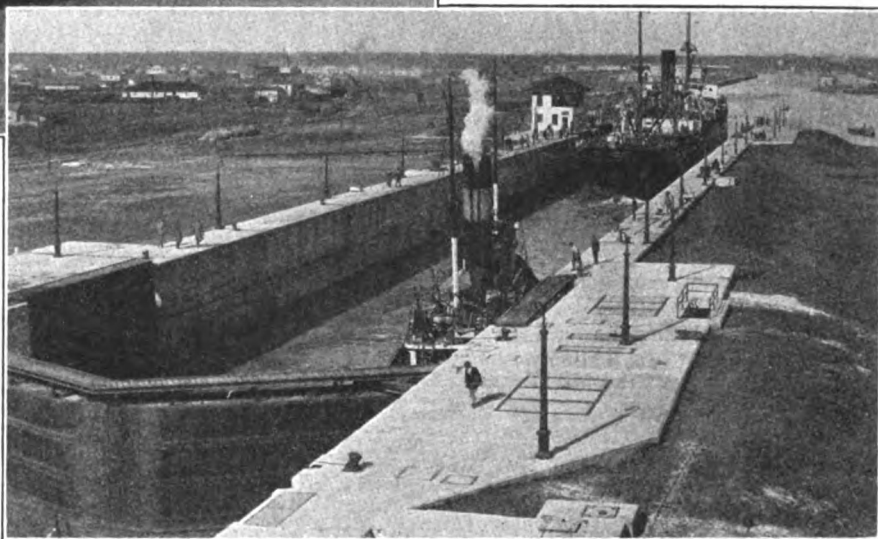
Until 1921 New Orleans had no satisfactory or efficient method of handling either bunker or cargo coal, no satisfactory land storage. The steamship interests felt that a public coal plant to handle bunker and cargo coal was a necessity if the port were to maintain its place. The dock board, always anxious to equip the port to the best of its ability, acquiesced in these views and as a result the plant now termed the public coal and bulk commodity handling plant was constructed. The construction of this plant was commenced on Sept. 3, 1919. The board's capital investment at the public coal and bulk commodity handling plant, exclusive of real estate, as of July 31, 1926, amounted to \$1,200,139.98.

Inner Harbor Developed

Looking forward with prophetic vision the board of commissioners of the port of New Orleans undertook on May 15, 1918, the construction of the inner harbor-navigation canal. As of July 31, 1926, \$18,462,067.02 had been spent upon this great undertaking. In creating the canal the board has amply guaranteed the port against failure to provide any facility the future may demand. The board has already commenced to create on its banks the most convenient and economical port in existence. The Galvez street wharf, the first public wharf to be constructed on the canal, was completed Aug. 31, 1925. It cost \$1,603,031.39. It is considered the most modern wharf in America. It

The board fully realizes the big things they must do to properly take care of the general cargo business of the port of New Orleans, now the second port of America. They are keeping a close watch of other developments, having a bearing upon their problems and have authorized their engineers in their program of new construction to keep five years ahead of the actual requirements.

Today the board of commissioners



Dock board's inner harbor—navigation canal—COMMERCIAL PATHFINDER first ship with cargo

is 2400 feet long and 265 feet wide.

While these great port facilities described above were being provided by the board there were being constructed on a tremendous scale, a splendid system of public wharves and steel transit sheds. These wharves and transit sheds stretching as they do for miles and miles along the river front present one of the most impressive sights in America. As of July 31, 1926, the board's capital investment in the dock department, exclusive of real estate, was \$10,847,192.09. As of Aug. 31, 1925, the board owned and operated 5,991,473 square feet of wharves with 4,264,100 sq. ft., shedded.

of the port of New Orleans are owners and operators for the state of Louisiana of the largest port terminal properties in America under one management. The bonded indebtedness of the board as of July 31, 1926, was \$39,012,000. The properties created by the board would probably have today as replacement value, a value of perhaps \$50,000,000 and the board has lands which are worth perhaps another \$50,000,000. In addition to the board's investment at the port of New Orleans, millions have been spent by private concerns and by the government in providing still other port facilities and improvements.



Entrance to \$20,000,000 inner harbor navigation canal at New Orleans. This canal is being developed into a great industrial and commercial harbor

Great Lakes Committee Appointed by American Bureau

CAPT. CHARLES A. McALLISTER, president of the American bureau of shipping recently announced the appointment of a special technical committee to consider and decide on technical questions arising in connection with the classification of the hulls and machinery of vessels intended for trade on the Great Lakes.

The traffic on these great inland seas has reached such importance that it employs a shipping tonnage which ranks very high in the world's merchant marine. In fact, if considered separately the Great Lakes marine in point of tonnage is only exceeded by that of Great Britain, Japan, France, Germany and Italy. It has more tonnage than is possessed by Sweden and Spain combined.

As these ships are operated entirely in fresh water, are subjected to a very limited depth of water at crucial points, have quicker turn-arounds in all ports and must operate through canals and locks, many technical points naturally arise in the design of these craft which are peculiar to this fleet.

Obviously the designers best fitted to decide on the questions involved are those whose years of training and experience have been devoted to the building and repairs of these ships. The following gentlemen whose high standing in the profession will at once be recognized by those familiar with shipping problems, have agreed to serve on the committee, as follows:

Sub-Committee on Naval Architecture: Chairman, Prof. H. C. Sadler, professor of naval architecture at the University of Michigan; Alfred G. Smith, president, American Ship Building Co., Cleveland; John A. Ubsdell, president, Great Lakes Engineering Works, River Rouge, Mich.; Charles C. West, president, Manitowoc Shipbuilding Corp., Manitowoc, Wis.; Edward Hopkins, vice president, Toledo Shipbuilding Co. Inc., Toledo, O.

Sub-Committee on Marine Engineering: Chairman, Henry Penton, consulting engineer, Cleveland; George B. Turnbull, vice president, Great Lakes Engineering Works, River Rouge, Mich.; James C. Workman, chief engineer, American Ship Building Co., Cleveland; A. P. Rankin, chief engineer, Manitowoc Shipbuilding Corp., Manitowoc, Wis.; John O.

Crofts, chief engineer, Toledo Shipbuilding Co. Inc., Toledo, O.

H. N. Herriman, manager Great Lakes department of the American Bureau of Shipping, Cleveland, will serve as ex-officio member of both committees.

Lake Traffic Huge

The magnitude of water-borne traffic on the Great Lakes is shown in statements prepared by the bureau of research, United States shipping board, in co-operation with the board of engineers for rivers and harbors, war department, indicating that more than 210,300,000 cargo tons of freight were handled through Great Lakes ports in 1925, an increase of 31,000,000 tons, 11.8 per cent, over the total of the preceding year. Nearly 44 per cent of the total water-borne commerce of the United States was conducted on the waters of the Great Lakes. The 197,500,000 tons of coastwise commerce of Great Lakes ports

exceeded the total coastwise trade of ocean ports by more than 30,000,000 cargo tons, and the 12,800,000 tons of foreign commerce passing through Great Lakes ports constituted 13.8 per cent of the total foreign commerce of the United States in 1925.

Made Manager of Sales

S. W. Wakeman, vice president of Bethlehem Shipbuilding Corp. Ltd., and general manager of East coast plants recently announced that A. B. Homer has been made manager of sales for the East coast plants of the Bethlehem Shipbuilding Corp., and placed in charge of the New York sales office, at 25 Broadway.

Launch Diesel Tug

The New London Ship & Engine Co. at its Groton, Conn., plant recently launched the steel tug B. M. THOMAS, built for the Hainsport Mining & Transportation Co., a subsidiary of the Van Scriven Construction Co. of Philadelphia. The boat is 89 feet long, with a beam of 21 feet 3 inches and a depth of 11 feet 3 inches. It is equipped with a Nelesco diesel engine of 500 horsepower, also built at the Groton shops, and with modern electric steering gear and auxiliaries.

Recent Sales of Ships

T. V. O'Connor, chairman of the United States shipping board, has announced the following sales of government tonnage:

LAKE ELLERSLIE and **LAKE INGLENOOK**, lake type, steel steam, single screw, ocean freighters, the former of 4261 deadweight tons and the latter of 4155 deadweight tons, equipped with triple expansion engines of 1425 indicated horsepower and two scotch boilers, sold to the New England, New York, and Texas Steamship Corp. for the sum of \$66,000 for the two.

WEST AFRICA, lake type, steel steam, single screw, ocean freighter of deep draft, of 4155 deadweight tons, equipped with a triple expansion steam engine of 1060 indicated horsepower and two scotch boilers, designed to steam at 8 1/2 knots on 24 tons of coal a day, sold to Doptoglou Bros., of New York, for \$25,000. She is the only coal burning laker of the larger class, all the rest having been included among those sold for scrapping.

KEKOSKEE, steel steam, single screw tanker of 7500 tons deadweight, sold to the Richfield Oil Co. for the sum of \$393,575.

DARFORD, steel steam, single screw tanker of 7500 tons deadweight, sold to James C. Brady for the sum of \$340,152.

KEHUKU, steel steam, single screw tanker of 7500 tons deadweight, sold to the Chile Steamship Co., Inc., New York, for the sum of \$323,000.

ROMULUS, steel steam, single screw tanker of 7500 tons deadweight, sold to A. I. Kaplan of New York for the sum of \$316,000.

DANNEDAIKE, steel steam, single screw tanker of 6000 tons deadweight, sold to The American Tankers Corp., Boston, for the sum of \$210,000.

Bids received by the shipping board for

other tankers, and rejected, were as follows:

A. I. Kaplan, \$52,500 for the **DANNEDAIKE** with agreement to convert to diesel propulsion within 18 months; from the same source \$180,000 for the same tanker for steam operation and \$275,000 for either of the tankers, **GLADSBBE** or **LILMAR**. It was stipulated that these bids were to be considered as offers in the event Mr. Kaplan's bid of \$316,000 for either the **KEHUKU**, the **ROMULUS**, the **CABRILLE** or the **DARDEN** was rejected.

Dunbar Molasses Co. \$131,000 for the **INSPECTOR** and \$45,000 for the **KISHACQUILLAS**.

Charles Kurtz & Co. \$176,500 for any one of the remaining six of design 1031.

S. S. Newman \$286,000 for **LILMAR**; \$276,000 for the **GLADSBBE**; \$278,000 for **CABRILLE**; \$265,000 for the **DARDEN**; \$266,000 for the **ROMULUS** and \$268,000 for the **KEHUKU**.

The shipping board rejected an offer received from the International Crusaders Inc. for the purchase of **S. S. AGAMEMNON** for the sum of \$100,000 cash. It was proposed by the bidders that the ship should be converted for use as a cruising ship to display American made goods in various parts of the world.

World Markets

CLYNE ROCK, 3600 deadweight tons, 2223 gross tons, for £15,000 to north country buyers.

CENTURY, double deck steamship, 7430 deadweight tons, 4313 gross tons for about £15,000 to Greek buyers.

CROMWELL, single deck steamship, 439 gross tons, for about £6000 to Ald Shipping Co., Ltd., Bristol. Renamed **HARPTREE COMBE**.

EKARI, double deck steamship, 6741 gross tons, 4090 net tons, to Compagnie Maritime du Congo.

KING CITY, 5200 deadweight tons, 2883 gross tons, for £16,000 to Greek buyers.

Marine Business Statistics Condensed

Record of Traffic at Principal American Ports for Past Year

New York

Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
November, 1926	454	1,909,756	477	1,885,401
October	486	1,954,853	542	2,801,465
September	492	2,087,694	543	2,270,398
August	491	2,084,147	507	2,075,643
July	493	1,943,133	546	2,251,396
June	542	2,337,678	563	2,279,208
May	448	1,856,777	538	2,126,788
April	483	1,967,964	538	2,248,081
March	523	2,090,847	511	2,033,938
February, 1926	404	1,591,273	454	1,826,886

Philadelphia

(Including Chester, Wilmington and the whole Philadelphia port district)

Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
November, 1926	168	429,403	139	377,016
October	145	370,112	128	329,420
September	107	234,144	82	196,434
August	109	248,435	81	170,661
July	92	191,680	69	128,381
June	104	229,631	56	109,561
May	97	215,829	69	151,287
April	80	185,401	61	135,919
March	107	264,754	72	158,858
February, 1926	78	184,715	52	113,763

Boston

(Exclusive of Domestic)

Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
November, 1926	89	275,245	56	177,876
October	100	300,921	58	171,933
September	105	308,189	83	246,136
August	128	321,377	96	206,879
July	152	336,135	108	274,513
June	164	370,626	109	262,468
May	134	277,009	111	261,878
April	101	285,245	77	210,542
March	117	356,432	62	173,217
February, 1926	92	263,475	42	136,613

Portland, Me.

(Exclusive of Domestic)

Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
November, 1926	20	34,092	20	34,917
October	20	48,468	23	52,900
September	24	43,783	19	35,828
August	23	47,089	26	45,669
July	27	47,885	26	47,569
June	29	44,390	29	46,942
May	19	49,894	17	47,016
April	23	48,336	32	73,947
March, 1926	34	97,413	31	88,462

Providence

(Exclusive of Domestic)

Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
November, 1926	2	7,689	2	7,690
October	7	23,091	8	29,815
September	5	20,651	5	22,324
August	6	20,764	3	12,299
July	7	29,207	5	18,641
June	5	17,954	8	8,355
May	7	26,057	6	20,806
April	8	28,449	5	23,480
March	15	47,557	8	34,025
February, 1926	8	29,622	7	30,033

Portland, Oreg.

(Exclusive of Domestic)

Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
November, 1926	34	135,455	48	173,820
October	41	151,013	59	217,745
September	33	126,772	56	201,152
August	40	150,609	46	167,419
July	24	93,977	33	127,270
June	22	77,850	45	156,103
May	35	128,851	43	152,890
April	17	66,789	29	107,892
March	21	85,073	38	134,432
February, 1926	23	81,440	33	114,147

Baltimore

(Exclusive of Domestic)

Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
November, 1926	292	818,707	298	853,723
October	271	791,999	261	783,263
September	230	678,127	224	670,465
August	228	672,453	221	639,677
July	211	644,261	202	603,648
June	138	402,230	132	371,781
May	120	369,729	121	355,443
April	107	330,401	110	326,649
March	120	382,983	119	362,256
February, 1926	102	304,714	99	288,640

Norfolk and Newport News

(Exclusive of Domestic)

Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
November, 1926	184	527,290	281	782,914
October	252	683,297	307	850,828
September	252	705,604	281	766,503
August	188	545,861	255	733,837
July	267	727,374	309	854,305
June	78	215,803	171	502,701
May	40	107,858	140	368,515
April	21	45,875	126	305,549
March	22	40,160	140	395,033
February, 1926	20	48,377	108	298,756

Savannah

(Exclusive of Domestic)

Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
November, 1926	43	102,126	41	99,244
October	40	97,908	46	121,792
September	38	103,029	38	106,472
August	37	101,726	35	91,141
July	37	112,158	38	117,064
June	45	125,766	47	126,452
May	50	137,030	39	103,408
April	34	77,027	39	87,455
March	38	97,332	34	91,981
February, 1926	26	60,788	27	60,924

Key West

(Exclusive of Domestic)

Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
November, 1926	97	116,965	97	115,032
October	78	92,987	79	96,718
September	81	91,321	80	88,844
August	84	98,702	87	99,362
July	78	86,124	77	86,323
June	94	110,100	94	108,581
May	114	126,089	109	120,597
April	88	101,331	88	99,227
March	102	117,292	90	114,917
February, 1926	70	85,607	69	88,229

Mobile

(Exclusive of Domestic)

Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
November, 1926	90	200,301	83	182,839
October	98	213,430	99	211,785
September	84	179,225	75	165,838
August	89	166,164	81	158,197
July	86	153,642	84	159,256
June	89	168,610	89	163,318
May	99	183,795	95	191,442
April	109	205,035	98	178,025
March	125	228,481	115	221,022
February, 1926	100	153,884	92	188,057

Seattle

(Exclusive of Domestic)

Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
November, 1926	63	234,742	54	231,343
October	56	236,587	55	230,412
September	54	219,623	58	233,320
August	53	229,111	48	206,042
July	35	146,670	31	126,407
June	39	165,989	42	181,090
May	39	159,755	44	163,718
April	51	215,641	47	191,161
March	38	166,536	45	184,067
February, 1926	42	168,308	45	182,920

New Orleans

(Exclusive of Domestic)

Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
November, 1926	253	731,871	238	685,253
October	236	673,606	250	721,608
September	226	620,095	240	666,778
August	275	764,464	256	721,654
July	263	716,066	270	739,005
June	255	658,385	221	665,960
May	287	753,621	284	772,138
April	248	626,277	296	694,673
March	295	754,863	300	751,054
February, 1926	255	717,048	250	691,747

Charleston

(Exclusive of Domestic)

Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
November, 1926	39	114,449	39	103,266
October	11	32,323	15	40,127
September	22	65,872	34	98,447
August	24	64,334	20	51,506
July	13	37,020	13	33,908
June	8	27,095	10	30,601
May	5	13,321	10	20,514
April	11	37,459	12	27,166
March	18	64,432	20	49,897
February, 1926	10	35,629	10	21,945

Galveston

(Exclusive of Domestic)

Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
November, 1926	64	180,917	118	359,948
October	47	112,816	118	352,203
September	52	139,219	127	368,302
August	55	129,477	131	389,432
July	60	164,241	116	352,290
June	53	119,497	72	185,444
May	28	65,578	61	180,449
April	37	87,356	82	216,312
March	42	87,056	72	208,346
February, 1926	39	89,426	71	208,388

Los Angeles

(Exclusive of Domestic)

Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
November, 1926	184	439,736	138	337,937
October	187	448,038	155	421,807
September	151	406,314	211	386,739
August	143	458,240	151	399,349
July	127	460,296	103	352,367
June	123	349,936	88	344,187
May	133	376,720	112	351,123
April	149	434,866	130	370,158
March	139	371,793	128	305,105
February	119	363,875	111	306,161
January, 1926	130	381,785	115	335,041

San Francisco

(Exclusive of Domestic)

Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
November, 1926	128	543,103	139	512,671
October	145	532,024	153	575,263
September	170	568,323	156	561,513
August	169	580,310	111	466,346
July	160	523,527	102	495,849
June	142	561,774	100	419,036
May	154	605,068	116	428,814
April	155	583,821	167	602,680
March	144	571,040	135	511,010
February, 1926	133	506,778	134	506,317

Port Arthur

(Exclusive of Domestic)

Personal Sketches of Marine Men

William Francis Gibbs, President, Gibbs Bros. Inc.

By E. C. Kreutzberg



HIS work and his personality have become well known and have made a deep impression upon the ship-building and shipping circles of his time.

INTENSE and thorough in his work he carries his ideas into practice with remarkable insistence and with utmost courage.

HE POSSESSES a keen and searching mind and reads widely not only that which has a bearing on his business but also matter of cultural interest.

IN HIS boyhood, William Francis Gibbs made boats his hobby. This was somewhat peculiar for the reason that his ancestry was entirely devoid of engineers and seafaring men. His father was a financier. But young Gibbs was always buying boats and he accumulated a large collection of them. He would put these in the bathtub and for hours would observe their behavior in the water. His parents took him to England and when they asked him to pick out a souvenir of his trip, he selected a beautifully made compound steam engine, about five inches high. He was interested in other mechanical devices. For instance, he had a most elaborate electric railway. But his primary enthusiasm was for boats. Today Mr. Gibbs, still a young man—born at Philadelphia in 1888—has won recognition as one of the ablest ship designers and engineers in the United States.

Mr. Gibbs entered Harvard at 18 and graduated as a bachelor of science in the class of 1910. Classmates recall that he was an unusually hard-working student. Then he went to Columbia and studied two courses simultaneously, law and arts. After graduating in 1913, he traveled abroad for a period. On his return to New York he passed the bar examination. Soon after, he set up as a consulting naval architect and marine engineer and became connected with the International Mercantile Marine. In 1918, five years after graduating from college, Mr. Gibbs was appointed chief of naval construction for the International Mercantile Marine.

After that, affairs moved with tremendous momentum. In his connection with the International Mercantile Marine, Mr. Gibbs was closely associated with P. A. S. Franklin, president of that great interest, so that when Mr. Franklin became chairman of the shipping control com-

mittee, appointed to work in conjunction with the shipping board during the war, Mr. Gibbs was called upon to serve as naval architect for the committee. In this connection his abilities quickly registered themselves, and in 1919, Mr. Gibbs was called upon to go to Paris where he served as special assistant to the chairman of the shipping board during the Peace conference.

Then he resumed his old place as chief of construction for the International Mercantile Marine, who had been appointed agent of the shipping board in connection with the reconditioning of the LEVIATHAN and to Mr. Gibbs, as chief of construction, fell the task of preparing the plans and specifications.

In 1922, at the request of the shipping board, Mr. Gibbs left the International Mercantile Marine to organize his own company for handling the reconditioning of the LEVIATHAN. With his brother, F. H. Gibbs, he organized Gibbs Bros. Inc., with William Francis Gibbs as president. The new firm at once proceeded with the task. The LEVIATHAN was reconditioned at Newport News and was ready for operation in 1923. Mr. Gibbs took over the operation of the ship during her guarantee period and at that time brought together the organization to take charge of this vessel. Mr. Gibbs then handled the reconditioning of the REPUBLIC in the same way. Later he also supervised the conversion of troopships into the five passenger and freight boats that now comprise the American Merchant line.

Few recent developments in shipping have attracted more interest than the Winchester-Gibbs bid whereby J. H. Winchester & Co., operators of the American Merchant line, and Gibbs Bros. Inc. jointly submitted to the shipping board a proposition to take over and operate the United States line, with additional provisions by which



Not How Much It Costs But, How Long It Serves

THE appeal of lower prices is the only possible reason for the use of inferior mooring lines but—

It's not the price per pound that determines the ultimate cost—It's the amount of service you get before renewals become necessary.

Specification of Plymouth Cordage for your mooring lines and all other rope needs insures less frequent rope renewals and lower operating costs.

Let us prove it to you.



*Ship chandlers everywhere
handle Plymouth Cordage*

PLYMOUTH CORDAGE COMPANY
North Plymouth, Mass. Welland, Can.

PLYMOUTH *The Rope You Can Trust*

Please mention MARINE REVIEW when writing to Advertisers

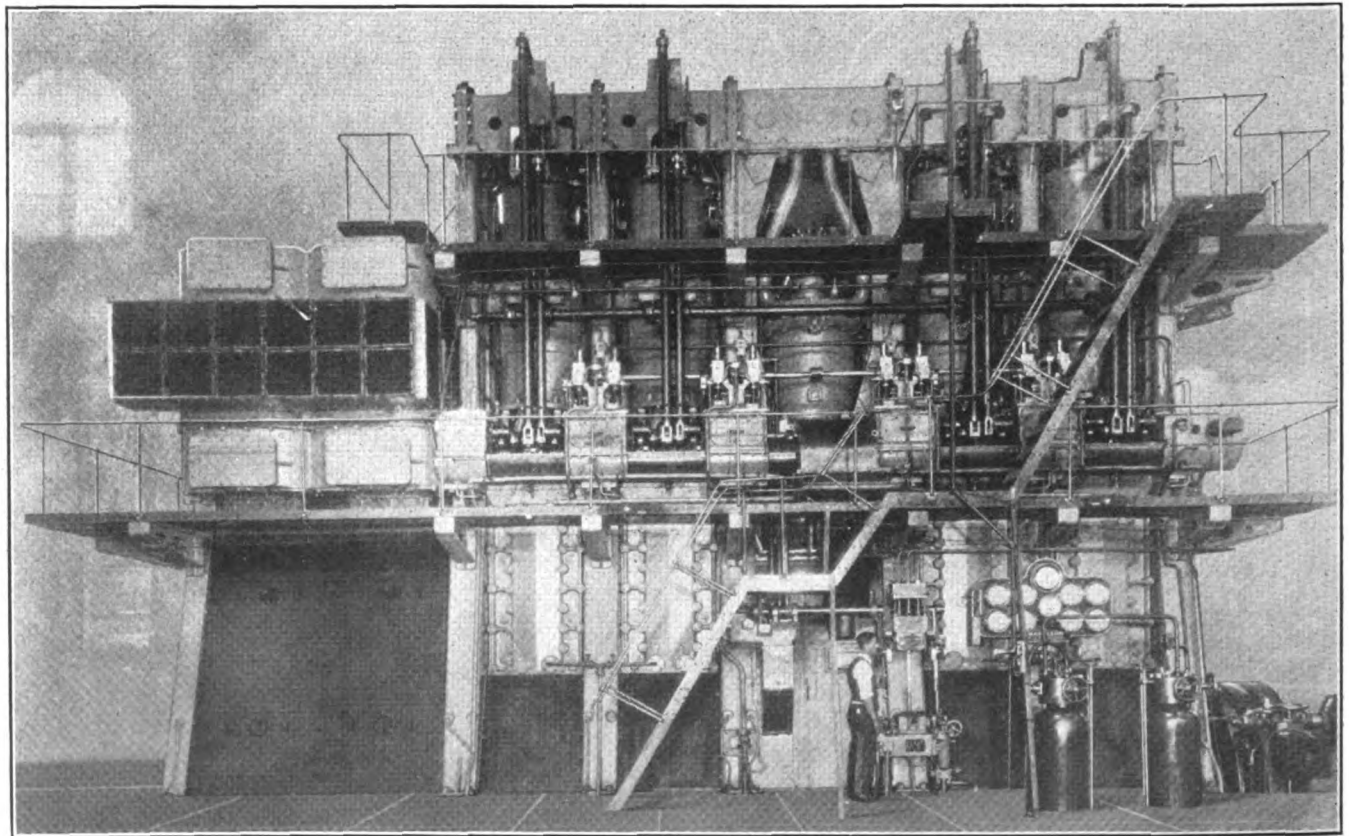
they thought they could operate the vessels involved at a profit. Testifying before a committee of the Senate at Washington, Dec. 16, Mr. Gibbs insisted the vessels could be made to return a profit under private ownership. He compared the government competition with privately owned lines to a "sandlot ball team playing against a big league team."

As chief of construction for the International Mercantile Marine, Mr. Gibbs had a lot to do with the design and construction of some of the newer I. M. M. boats. One of his outstanding achievements as a naval architect is in connection with the design of the MALOLO, recently launched and now being completed at Cramp's shipyard in Philadelphia. Mr. Gibbs served as chairman of the special committee on stability and loading of the American marine standards committee which was appointed by Secretary Hoover. This committee last April submitted its first and tentative report and this has attracted wide attention all over the world. Mr. Gibbs for a time was chairman of the technical committee of the American Steamship Owners association. He is a member of one of the committees of the American Bureau of Shipping. He is a member of the American Society of Naval Architects and Marine Engineers.

Mr. Gibbs' most impressive characteristic is the peculiar combination of intensity and equanimity which he reflects at all times. He has few of the outside interests on which most men rely for recreation, spending practically all his time at his work. He is very thorough in his methods and has unbounded courage in carrying his conclusions into practice. He accepts entire responsibility for the work of his organization. He reflects unusual poise, never becomes excited, and possesses more than the average degree of patience. A picture of Mr. Gibbs' career would not be complete without saying that he earnestly favors elevating the standards of living and comfort aboard ship to the highest extent possible. He also believes in adequate compensation for commensurate service and does not think that payment of low wages is conducive to production.

Mr. Gibbs is an inveterate reader. He reads everything published that has a bearing on his business. In addition, he does a lot of reading from a general cultural standpoint. In connection with his business he travels a great deal. He enjoys the theater. He is a regular attendant at a Presbyterian church in New York City. He makes his residence in New York and is a bachelor.

Largest Marine Diesel Engine Tested



3300 shaft horsepower, double acting, 2-cycle diesel engine ordered by the United States shipping board, undergoing 30-day test at the plant of the builders, Hooven, Owens, Rentschler Co., at Hamilton, O.

WHEN the United States shipping board decided on a diesel conversion program it was the intention to encourage the development of this type of engine for marine purposes in this country. Now over two years after initiating the program it is beginning to show re-

sults which are of importance to the shipping industry.

The engine shown in the accompanying illustration was recently completed for the shipping board and has had its shop tests. It is a double acting two-cycle four-cylinder diesel engine known as the Hamilton M. A. N. The

engine develops 3300 shaft horsepower at 95 revolutions per minute and is said to be the largest diesel engine built in this country up to the present time. It is exactly the same in design as the 15,000 brake horsepower diesel engine installed at the Hamburg Elec-

(Continued on Page 70)

SHARPLES

centrifugal

OIL PURIFIERS

(Fuel and Lubricating)

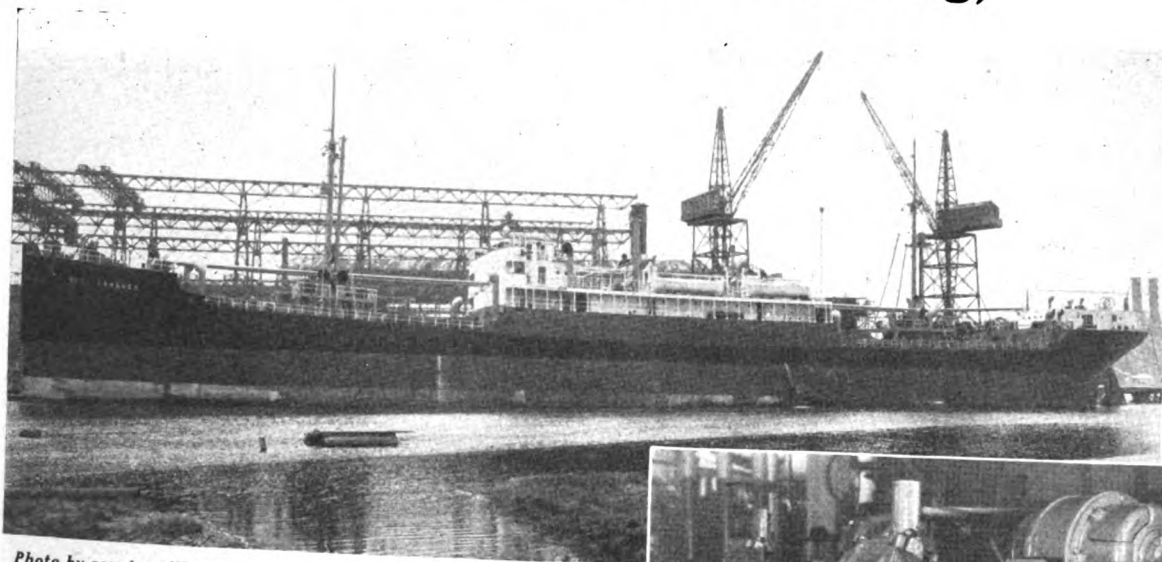
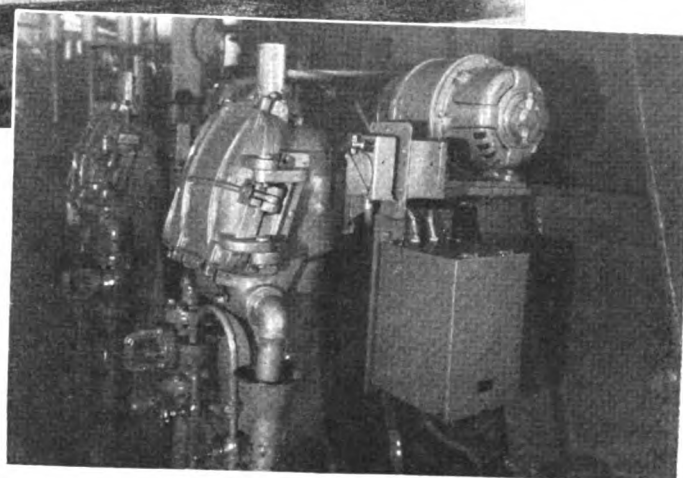


Photo by courtesy "Motorship"

Actual unretouched photograph showing SHARPLES installation on the Ms. "West Honaker" of the U. S. Shipping Board.



on the
Ms. "WEST HONAKER"

THE SHARPLES SPECIALTY COMPANY, 2338 WESTMORELAND ST., PHILADELPHIA

SHARPLES

A GREAT FORCE

Please mention MARINE REVIEW when writing to Advertisers

Merchants and Miners

(Continued from Page 24)

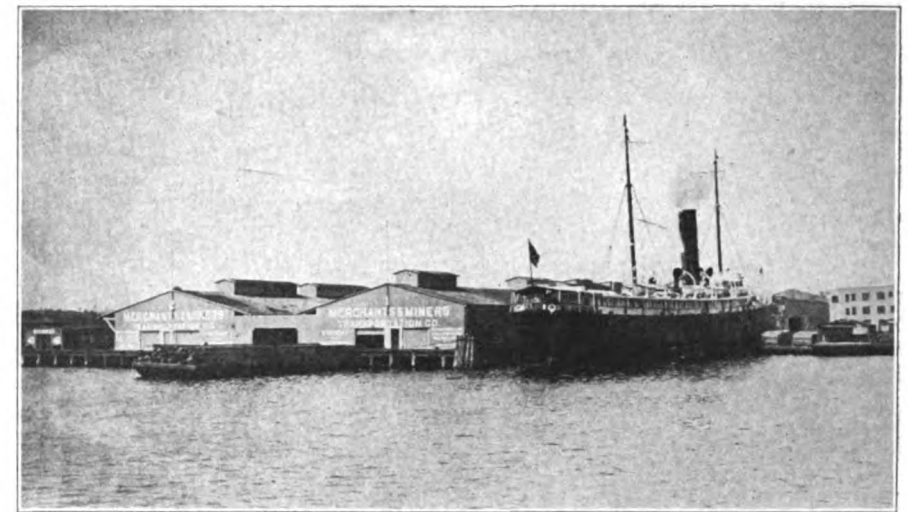
lounge, smoking room and dancing pavilion offers a place to suit all of the various tastes of the traveling public.

The safety and comfort of passengers and crew were kept constantly in mind in the design of these vessels and the most modern appliances have been installed to accomplish these ends.

For safety in navigation the latest equipment has been fitted such as the gyro compass, electrically operated and nonmagnetic, the submarine signal apparatus for detecting signals through the water sent out by lightships and lighthouses, the radio direction finder for locating the position of lightships or lighthouses or any other vessels sending out signals through the air, and thus enabling the ship to establish its own position in fog or heavy weather. A course recorder is also installed which records accurately the course sailed during any minute or hour of the entire voyage.

Safety Measures Adopted

Deckhouses are built of steel and are subdivided into various compartments with steel bulkheads and fireproof sliding doors to insure the safety of passengers and crew. Each stateroom is equipped with a Cory electro-pneumatic automatic fire alarm which will register in the pilot house in the event of any room becoming overheated. Lead soil pipes where pass-



TERMINAL AT JACKSONVILLE, FLA.—PIERS AT 800 EAST BAY STREET—OWNED BY THE MERCHANTS & MINERS TRANSPORTATION CO.

ing through a deck into a freight compartment have a cast iron extension piece which prevents the melting of the lead pipe in case of excessive heat. The freight compartments are fitted with the Rich smoke detecting and fire smothering system, this method will detect smoke in any cargo space through an elaborate system of pipes which lead to the pilot house where a suction is constantly maintained by a small fan driven by an electric motor, each pipe being marked with the name of the compartment it serves. Through this same system of piping, steam can be injected to smother any fire. To prevent the escape of steam and at the same time the induced draft through ventilators, each ventilator to each

separate compartment is equipped with shutters which can be closed to prevent the inflow of air.

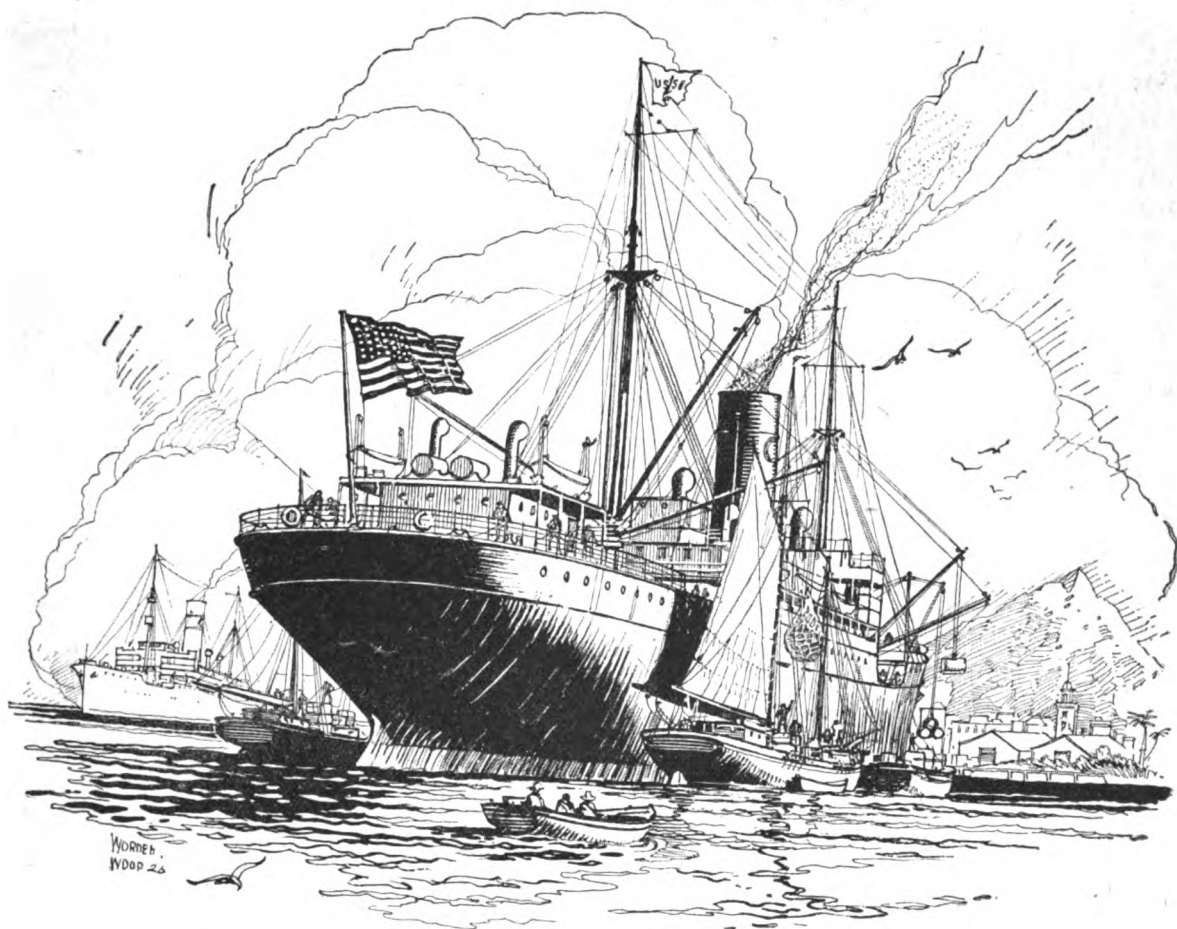
The boiler room where oil fuel is used in the furnaces is protected with the Lux carbon dioxide system which will inject CO₂ gas into the fireroom completely smothering any fire starting from oil.

Life Saving Equipment

Modern life boat accommodations complying in every respect with the rules and regulations of the United States steamboat inspection service is provided for all passengers and crew. The life boats are suspended under efficient Welin quadrant type of mechanical davits. The life boats are lifted or lowered by electrical



TERMINAL AT BALTIMORE—PIER 3, PRATT STREET AT FOOT OF SOUTH GAY STREET—HELD BY MERCHANTS & MINERS TRANSPORTATION CO. ON 50-YEAR LEASE FROM THE CITY OF BALTIMORE



Ship Your Exports via American Ships

SPEEDY freight services maintained by cargo vessels operated for the United States Shipping Board and sailing from all the leading American ports to all parts of the world offer a glowing opportunity to the American shipper to broaden and increase his business.

These services deliver shipments promptly and securely, open up new markets for merchandise, give added impetus to foreign trade. Furthermore, they are under the direction of experienced American opera-

tors whose advice is bound to prove helpful.

Important units in this fleet are the speedy passenger ships of the United States Lines, sailing from New York to principal European ports. In addition to carrying passengers, the United States Lines ships, led by the famous Leviathan, provide an exceptional express freight service.

For complete information on either freight or passenger service, consult "Schedule of Sailings," a comprehensive publication issued by the Traffic Department, or write direct.

"Americans Ship on American Ships"

TRAFFIC DEPARTMENT

United States Shipping Board Emergency Fleet Corporation

WASHINGTON, D. C.

Please mention MARINE REVIEW when writing to Advertisers



MERCHANTS & MINERS TRANSPORTATION CO. PIERS 18 AND 20 SOUTH DELAWARE AVENUE, PHILADELPHIA

boat hoists. One of the life boats is powered with an oil engine and is capable of towing the remainder of the boats in case of necessity.

The S. S. CHATHAM was launched Feb. 3, 1923 and started her maiden voyage from Baltimore to Savannah and Jacksonville May 18, 1926, with Capt. Thomas P. Pratt formerly on the ALLEGHANY, in command and with J. H. Rudolph as chief engineer. The S. S. DORCHESTER was launched March 20, 1926 and sailed on her maiden voyage from Philadelphia to Boston July 20, 1926 with Capt. C. C. Jones formerly on the BERKSHIRE in command and with E. L. Blaisdell as chief engineer. The third and last of the sister ships, the S. S. FAIRFAX was launched June 12, 1926 and sailed on her maiden voyage Sept. 7, 1926 with Capt. W. J. Bond formerly on the ONTARIO in command and with J. Oliver as chief engineer. All three of these fine coastwise ships were

built by the Newport News Shipbuilding & Drydock Co. and are a credit to the builders and to the management of the owners.

Together with the ALLEGHANY and BERKSHIRE the three new steamers constitute one of the largest and finest passenger fleets operating in the coastwise trade. In addition to these five new vessels the company is also operating a number of well equipped passenger ships on its many routes along the Atlantic seaboard. In December 1925 three shipping board vessels of the "Lake" type the S. S. WYOMING and S. S. UPSHUR and S. S. VOLUSIA were purchased and made suitable for freight service. Later still another "Laker" the S. S. YORK was acquired. A complete list of all of the vessels now owned and operated, 20 in all, is given in Table II, page 16. The company also owns three tug boats (listed in Table III) and 46 open and covered lighters. Of

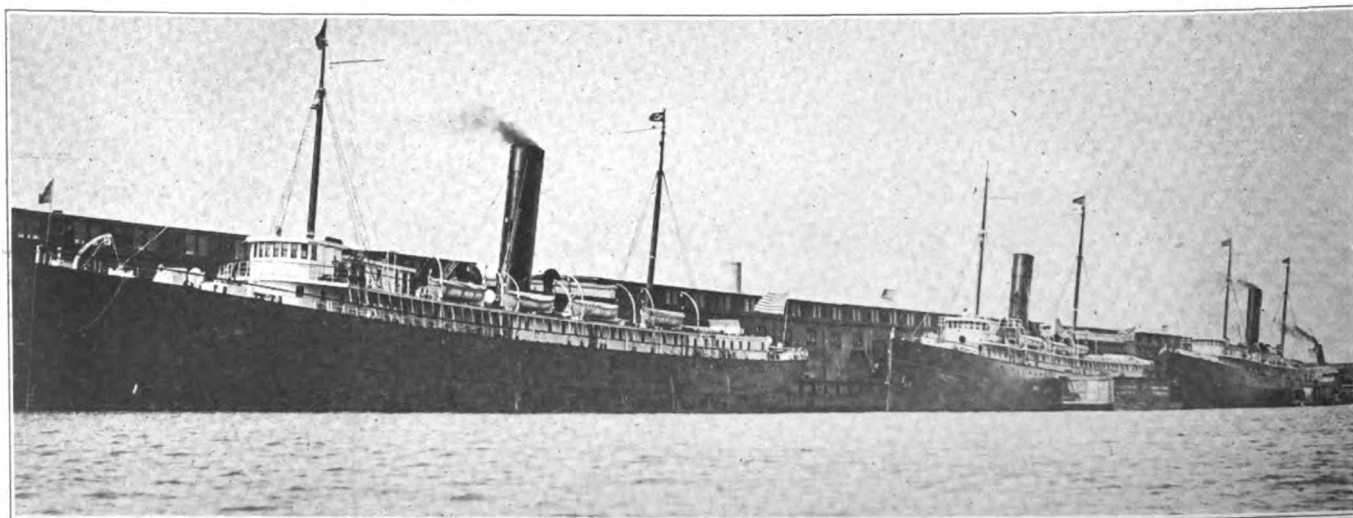
these lighters, ten are in Boston, twenty-two in Norfolk, ten in Baltimore and four in Jacksonville. Terminals are owned by the company at Philadelphia, Norfolk and Jacksonville.

Automobiles of all types are carried, open and enclosed, on all ships of the company. For the convenience of the traveling public the company has established a travel bureau at headquarters in Baltimore. The bureau was opened Dec. 1, 1924 under the direction of Mrs. J. W. Freeman as manager. This bureau has been very successful in supplying the traveling public with full information not only about the company it represents directly but also about connecting lines. All expense tours for passengers are arranged by the bureau. For instance tickets may be purchased from Baltimore to Montreal including all expenses of the entire trip and return. Personally conducted tours are also arranged for. Branches of the bureau were established Sept. 15, 1926 in connection with the ticket offices at Philadelphia, Washington and Pittsburgh.

Ports Served by the Company

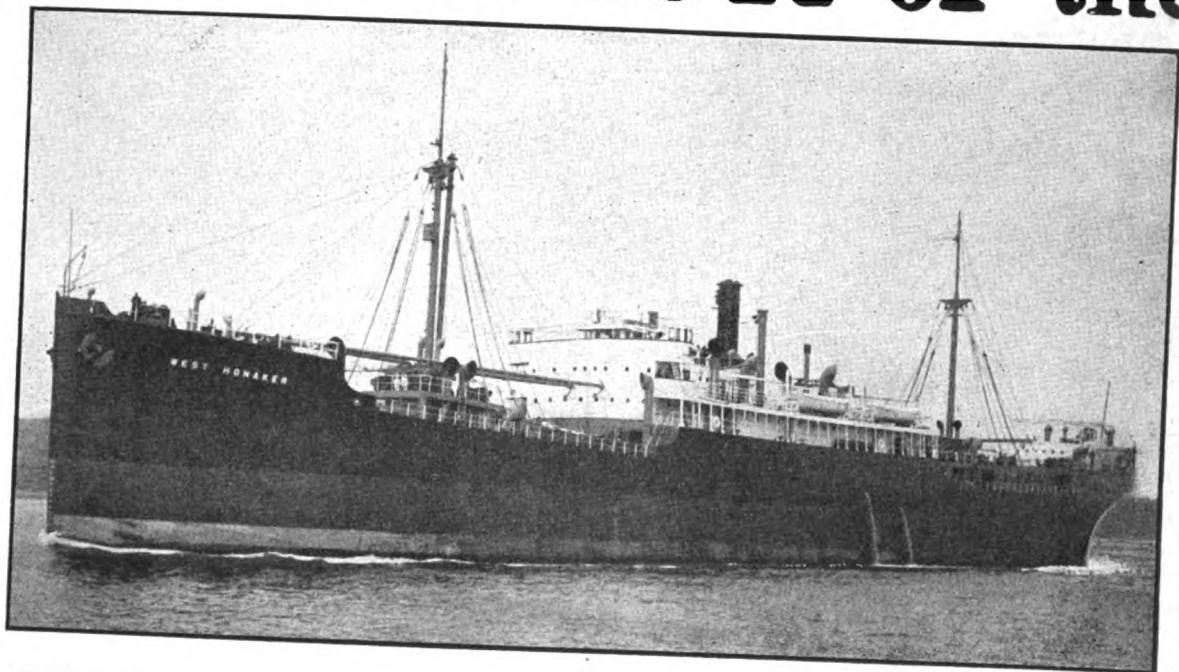
The accompanying map of the Atlantic seaboard, page 14 shows at a glance the ports served by regular scheduled sailings of the company. Terminals and offices are of course, maintained in each one of these ports. Off-line offices are also maintained at New York, Pittsburgh, Washington, Atlanta, Orlando, Tampa and St. Louis. Excepting at Washington and Orlando which are ticket offices the others are combination passenger and freight offices.

It has been pointed out that no section of the country is better served by efficient railroad systems than the Eastern seaboard and adjacent in-



S. S. JUNIATA AND TWO OTHER OF THE OLDER STEAMERS OF MERCHANTS & MINERS TRANSPORTATION CO. ALONGSIDE THE COMPANY'S PIER AT FOOT OF FAHM STREET, SAVANNAH, GA.

Conversion of the



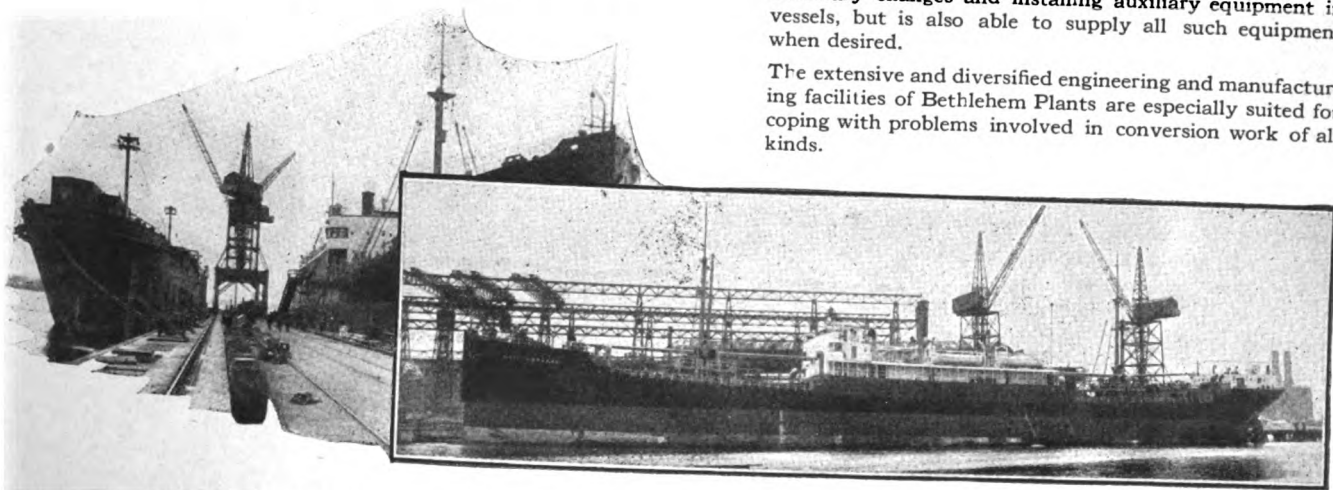
"West Honaker"

ANOTHER example of thoroughness in motorship conversion is presented in the completion of the 8600-ton freighter "West Honaker", which has been accepted and placed in commission by the U. S. Shipping Board.

THE "WEST HONAKER" was converted from steam to direct Diesel engine drive at the Fore River Plant of Bethlehem Shipbuilding Corporation, Ltd., at Quincy, Mass.

Bethlehem has complete facilities not only for making the necessary changes and installing auxiliary equipment in vessels, but is also able to supply all such equipment when desired.

The extensive and diversified engineering and manufacturing facilities of Bethlehem Plants are especially suited for coping with problems involved in conversion work of all kinds.



BETHLEHEM SHIPBUILDING CORPORATION, LTD., BETHLEHEM, PA.
GENERAL SALES OFFICES: 25 BROADWAY, NEW YORK CITY

District Offices: Boston, 100 Milk St.; Philadelphia, Widener Bldg.; Wilmington, Foot of West St.; Baltimore, South and Water Sts.;
 Cleveland, Union Trust Bldg.; Chicago, Monadnock Bldg.; San Francisco, Matson Bldg.

BETHLEHEM

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terior. It is interesting to consider therefore, on what basis this coastwise steamship company can compete with the railroads in the movement of freight between interior points.

Meets Rail Competition

Since a large volume of freight is moved in the company's ships at a profit it is evident that it is possible to compete with the rail lines not only directly between the ports of call but also between many widely separated communities in the interior by part rail and part water transportation instead of an all rail movement. The reason for this is that the ships are able to quote equal and in most instances better rates and at

or to interior points transshipped from rail to steamer and again from steamer to rail, or business originating in the interior transshipped from rail to steamer and terminating at its port of destination. Many shippers within a considerable radius of large cities which are also seaports, truck their goods to or from the steamship terminals and consequently business originating and terminating in cities like Boston, Philadelphia and Baltimore has grown to large proportions.

Where shipments can go all the way by water it would hardly seem necessary to urge shippers or receivers to use this method as the advantages are evident. If a ship-

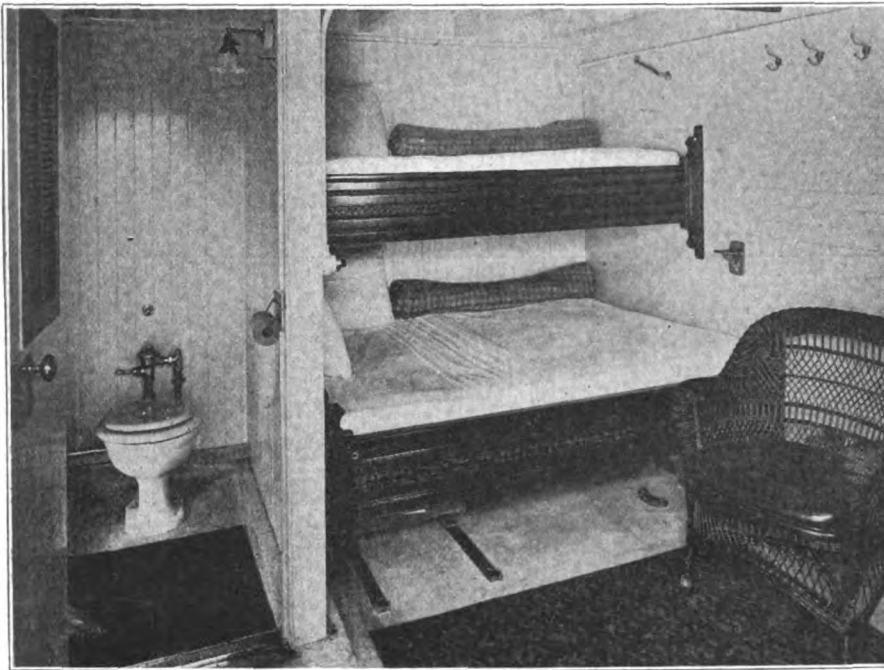
tory outside of Boston, perhaps a shipment of shoes or rubbers, may be moved from the shipping room of that factory to the receiving room of a department store in Philadelphia within a period of two days. The rates from terminal in Boston to terminal in Philadelphia is 61½ cents per 100 pounds including marine insurance. By rail the charges are 66½ cents per 100 pounds. The time by rail at best will not be less than the time by steamer which within close limits is always the same except under extraordinary circumstances.

The time between Boston and Norfolk by steamer is also thirty-eight hours. Delivery can therefore be made from factory near Boston to store in Norfolk within two days. The rate per hundred pounds is 81½ cents. By rail the rate is 86½ cents per 100 pounds while the time by rail under ordinary conditions is four days. The sailing time between Boston and Baltimore is fifty hours so that delivery can be made of a shipment from factory near Boston to store in Baltimore within three days at a charge of 73 cents per 100 pounds. The rail charge is 78 cents per 100 pounds and the time would not be less and is likely to be a little longer.

Similar advantages apply to shipments from Philadelphia or Baltimore to Southern ports such as Savannah, Jacksonville and Miami. The charges on clothing for instance from Baltimore to Savannah by steamer is 99 cents per 100 pounds, and to Jacksonville \$1.16 per 100 pounds without marine insurance, while the corresponding rates by rail are \$1.65½ to Savannah or Jacksonville. The time by steamer would be within three days to Savannah and within four days to Jacksonville while the time by rail ordinarily is four and five days respectively.

South is Growing Rapidly

Florida has become an important factor in the shipment of freight as well as in passenger travel and the Merchant and Miners company recognizing this condition sometime ago extended their service to include Miami and West Palm Beach. The company handles considerable freight from points in the central west, north of the Ohio river and east of the Mississippi river from Illinois, Indiana, Ohio, Michigan, and other sections into Georgia and Florida, particularly Savannah, Jacksonville, West Palm Beach and Miami. The rates are lower than the all rail rates and merchants in this territory have found



STATEROOM—S. S. HOWARD, ONE OF THE OLDER VESSELS—TYPICAL ALSO OF THE GLOUCESTER AND JUNIATA

the same time give dependable service. Time of delivery is reduced because of frequent regular sailings. There is a greater certainty of delivery within the specified time and greater security against loss and damage.

It seems strange but it is true that a firm in Chicago buying f.o.b. cars in some town in the extreme western end of Massachusetts, or in central and northern New Hampshire or in Maine may find it more advantageous to ship by rail to Boston thence to Norfolk or Baltimore by ship and thence by rail to Chicago, than all the way by rail.

The freight business of the company may be divided into business which originates and terminates in the ports between which regular sailing are maintained, business from

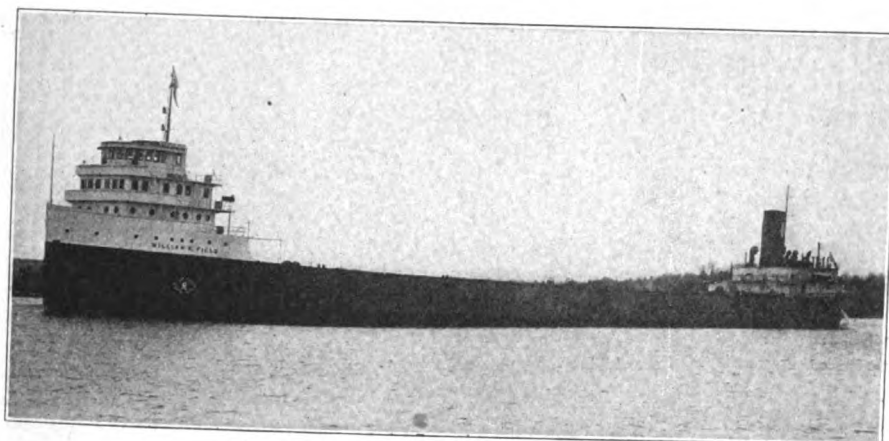
ment is delivered to the pier before the time for closing out freight that shipment whether a single package or a carload lot is placed on board the particular ship for which it is intended and it arrives at its destination with uniform regularity practically at the hour scheduled. There is therefore, a definiteness and certainty about shipments by steamer which cannot be so in regard to shipments by rail. Rates by water also generally include marine insurance.

Some examples may be given showing the advantages of direct by water transportation. A steamer leaving Boston let us say at 5:00 p. m. on Tuesday is due in Philadelphia on Thursday at 7:00 a.m. an elapsed time of thirty-eight hours which means that the products of a fac-

Toledo Shipbuilding Company Inc.

TOLEDO - - - OHIO

*Builders of the
World's Record Cargo Ship*



Steamer William K. Field

604 ft. Long, 60 ft. Beam, 32 ft. Depth. Deadweight Tonnage 12000.

OVER half a million tons of freight carried—forty six cargoes of ore and coal delivered in seven months and seventeen days by the steamer William K. Field.

This remarkable performance earned her the title, "Champion Freight Carrier of the World". During the season 1924 on the Great Lakes she registered a total

of 552,014 tons. *An unprecedented accomplishment!*

The William K. Field is owned and operated by Reiss Steamship Company, Cleveland, Ohio. Her type of construction permits rapid loading and discharge of cargo. This was an important factor in her record breaking performance.

Builders and Repairers of Ships and Engines

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it an advantage to use the cheaper water service from Baltimore and Philadelphia in connection with shipments to Florida points. Many automobiles are carried for the Buick Motor Co., from Flint, Mich., and Cadillac cars from Detroit, and Oaklands, Chryslers and more recently Dodge cars are also shipped by water.

Rail and Steamer Co-operate

From the above the impression might be created that the steamship company and the rail lines are unrelenting competitors each presenting to the shipper and receiver the advantages of his respective services to gain patronage. There is of course, direct competition but in most instances of this sort the advantage lies so clearly with the steamship lines that the rail lines accept the decision with equanimity. On the other hand, with respect to a large volume of freight business there is friendly co-operation, each acting as a feeder for the other and as a necessary link in the economical and expeditious movement of freight. Freight is carried to Boston and Providence by rail thence by steamer to Norfolk, Newport News or Baltimore where it is again transshipped by rail to its destination. In a similar manner freight originating in the central west is shipped by rail to Philadelphia or Baltimore thence by steamer to Southern ports and thence by rail to its point of destination. Similarly freight originating in the south and southwest bound for the Middle Atlantic states or Central West, is shipped to Southern ports by rail thence by steamer to Baltimore or Philadelphia where it is again transshipped by rail to points of destination.

To show the quick despatch and with few exceptions the lower rates applying to shipments from New England, or the Central West and Middle Atlantic states (served by Baltimore and Philadelphia), to many distant and widely separated points by using steamer and rail instead of all rail a few definite examples may be given as follows:

FROM BOSTON AND PROVIDENCE

TO	(Rates include marine insurance) (Via water and rail)		(Via all rail)	
	Rates in cents per 100 lbs.	Due to arrive day	Rates in cents per 100 lbs.	Due to arrive day
Pittsburgh	90	8th	90	4th
Akron, O	101	6th	101	
Detroit	111	10th	111	3rd
Chicago	135	6th	142	4th
St. Louis	159	7th	166	4th
Memphis, Tenn.	209½	6th	209½	8th
Montgomery, Ala.	195	6th	204	9th
Birmingham, Ala.	195	5th	204	9th
Atlanta, Ga.	187½	4th	196½	8th
Denver	392	10th	412	11th

Kansas City, Mo.	242½	8th	249½	8th
Salt Lake City, Utah	490	12th	510	12th
Topeka, Kans.	270	9th	287½	9th
Little Rock, Ark.	226	8th	307	8th
Columbia, S. C.	166½	4th	173½	6th
Charlotte, N. C.	144	4th	151	6th

FROM PHILADELPHIA

TO	(Rates include marine insurance) (Via water and rail)		(Via all rail)	
	Rates in cents per 100 lbs.	Due to arrive day	Rates in cents per 100 lbs.	Due to arrive day
Memphis, Tenn.	202½	6th	202½	7th
Montgomery, Ala.	187½	5th	196½	8th
Birmingham, Ala.	187½	5th	196½	8th
Atlanta, Ga.	180	4th	189	7th
Denver	392	9th	406	11th
Kansas City, Mo.	235½	7th	243½	8th
Salt Lake City, Utah	490	10th	510	12th
Topeka, Kans.	270	8th	281½	9th
Little Rock, Ark.	218½	7th	300	8th

FROM BALTIMORE

TO	(Rates include marine insurance) (Via water and rail)		(Via all rail)	
	Rates in cents per 100 lbs.	Due to arrive day	Rates in cents per 100 lbs.	Due to arrive day
Memphis, Tenn.	192½	6th	192½	7th
Montgomery, Ala.	177	5th	186	8th
Birmingham, Ala.	177	5th	186	8th
Atlanta, Ga.	169½	4th	178½	7th
Denver	392	9th	404	11th
Kansas City, Mo.	233½	7th	241½	8th
Salt Lake City, Utah	490	10th	510	12th
Topeka, Kans.	270	8th	279½	9th
Little Rock, Ark.	209	7th	290	8th

From examples given in the above table it is clear that a marked advantage in rates rests with water and rail transportation as against all rail, while to points West there is generally some advantage in time via all rail. To points in the South however, both rates and time of delivery are considerably lower for a combination of rail and water than by all rail.

Besides the regular freight service as described the steamship company offers to shippers and receivers an express service giving store door delivery. Two express companies operate over its line, the Coastwise Express between Boston, Providence, Philadelphia and Baltimore, and the Southeastern Express, between Boston and Providence and points on the Southern railroad.

During 1923 a total of 1,033,969 tons of freight moved over the company's lines. The totals for 1924 and 1925 were in keeping with that for 1923 while the tonnage for the first ten months of 1926 has shown a consistent increase over previous years. Growth of the company's business in the future in view of the prosperous condition of industry and

commerce is looked forward to with confidence.

The efficient management of the Merchants and Miners Transportation Co., is indicated very clearly by the present strength of the company. The company started paying dividends in 1856, the rate for that year being 20 per cent. Dividends were paid continuously in all the intervening years until 1913. The payment of dividends was resumed in 1921 at a rate of 8 per cent. This rate was continued until Dec. 31, 1925 when all stock was called in and four shares of no par value were issued for each original share, payment of dividends beginning at the same time on the basis of \$2.50 per share.

The company has no bonded indebtedness, no bank loans or preferred stock, and its outstanding capital consists of 242,500 shares of no par value common stock, held by about 1600 stockholders. Within the last four years, the company has built five modern ships costing in all approximately \$5,300,000, three freight ships have been acquired from the shipping board and made suitable for service at a total cost of approximately \$75,000 per ship. Later, still another shipping board freighter was acquired. Besides these nine ships the company owns and has in operation eleven other vessels, three tug boats and forty-six lighters. Valuable terminal property is owned by the company at Philadelphia, Norfolk and Jacksonville. It also owns improvements on leasehold property at Boston, Baltimore, Providence and Savannah. The modern six-story office building which it occupies in Baltimore is also owned by the company, as well as wharf equipment and other miscellaneous property.

Financial Condition Good

It is interesting to note from the seventy-third annual report of the company for the year 1925 that the revenue from freight traffic for that year amounted to \$7,019,572.98 and that the revenue from passengers carried for the same year, amounted to \$1,710,490.05. Miscellaneous transportation revenue and income from other sources made a total gross revenue for the year of \$8,864,297.07. Operating expenses for that year were \$6,824,666.98, state and municipal taxes and rentals, \$296,578.41, the amount set aside for Federal income taxes for the year was \$254,853.59 making the total expenses \$7,376,098.98. The net income for the year 1925 therefore, amounted to \$1,488,198.09. During the years 1922 to 1925 both inclusive a total of \$1,-

SUN SHIPBUILDING & DRY DOCK COMPANY

Builders of

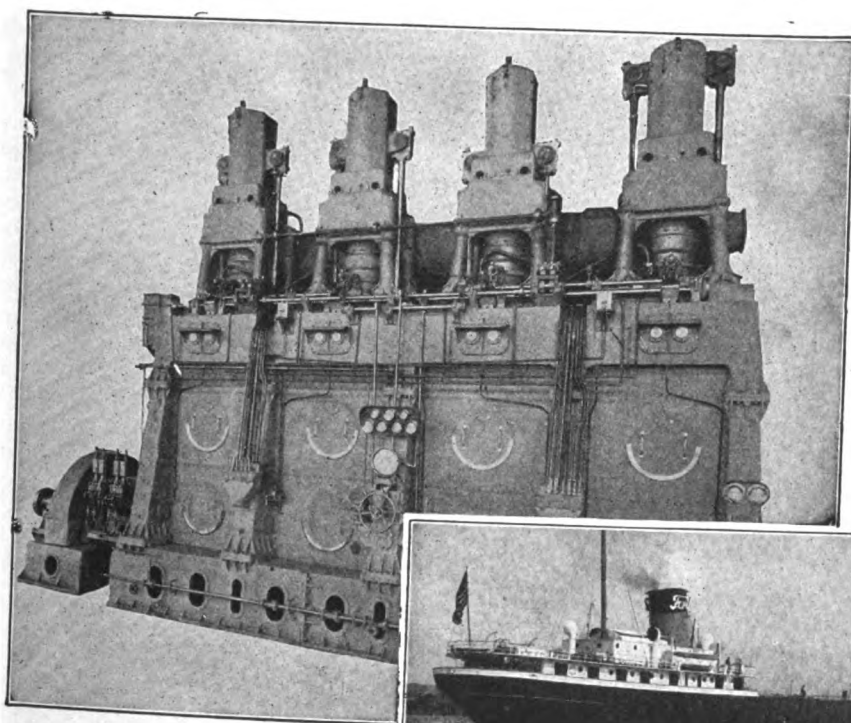


SUN-DOXFORD DIESEL ENGINES



The Engines that Power

"HENRY FORD II" *and* "BENSON FORD"



3000 S. H. P. Sun-Doxford Diesel Engines power the two motorships, "Henry Ford II" and "Benson Ford".



M. S. "Henry Ford II"

SUN-DOXFORD *and* JUNKERS PATENTS

Main Office and Works:
Chester, Pa. - U. S. A.

Philadelphia Office:
Finance Building

New York Office:
Cunard Building

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529,162 has been paid in dividends and \$3,035,380.77 has been carried forward to depreciation and profit and loss account. This means that the company has paid out in dividends only one third of its available cash.

Not a man connected with the

Merchants and Miners, or anyone else familiar with conditions surrounding the company after the railroad administration turned the property back to the owners, but feels that the wonderful change, from a disrupted organization with wharf properties

and ships in indifferent repair and with the good will of shippers and travelers dissipated, to its present sound and prosperous condition, is due to the wise and courageous management of A. D. Stebbins president and general manager.

Radio Compass Is an Aid to Safety

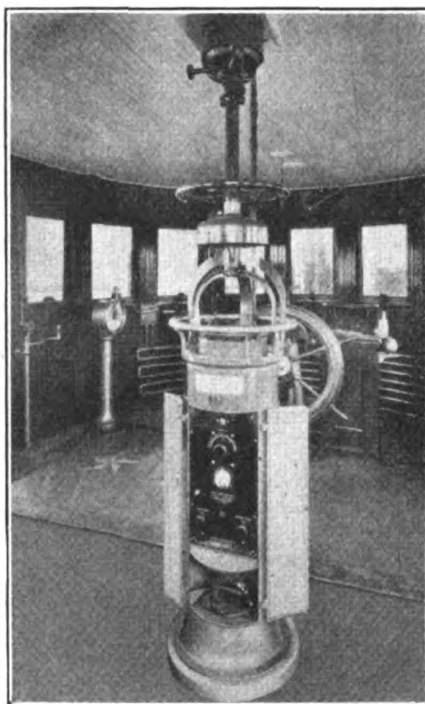
THE radio compass is a definite aid to navigation on the Great Lakes as well as the ocean. The results for accuracy and dependability obtained by the navigators on Great Lakes ships such as the QUINCY A. SHAW of the M. A. Hanna Co. exceeded expectations. Captain Colson of the QUINCY A. SHAW may be considered a pioneer in the correct use of the radio compass on the Great Lakes. Some of his bearings taken at distances ranging from 5 miles to 215 miles show practically no variation from calculated bearings. The maximum error shown is one degree.

In the early days of the radio compass many obstacles presented themselves in obtaining correct bearings. For instance, it was found that all nearby objects such as stacks, railings, rigging and the hull of the ship itself, affected and changed the indicated direction of oncoming radio waves causing serious errors. No two ships were alike. The causes were found to be fundamental and as hard and fast as the law of gravity. To overcome this Dr. Kolster evolved his automatic mechanical compensator. By means of this device, the vessel's radio compass is calibrated and all natural errors are eliminated so that when the loop is rotated and a bearing taken, the direction under the sight wires on the compass card reads absolutely true. The automatic compensator, to correct nature's ills, thus becomes the most important part of a radio compass. Without it false bearings would result, the degree of error depending upon the construction of the ship.

The operation of the Kolster radio compass standard model made by the Federal Telegraph Co., San Francisco, is very simple. It was never intended by the inventor Dr. Kolster that a radio operator should have anything to do with the operation of the radio compass and the apparatus requires no tuning. It is only necessary to set one dial to the wavelength desired, and all fixed radio beacons operate on 1000 meters. Mobile beacons, another development of Dr. Kolster will soon be an established fact and they will probably operate on approximately 850 meters. These will be installed on

board ship and are strictly for collision prevention, used in conjunction with a radio compass. They are of low power, with an estimated service range of 10 miles.

To obtain a radio compass bearing with the Kolster device, the navigator merely pulls a snap switch which turns the current on the receiver. He then rotates the loop by means of a convenient hand wheel and listens in



RADIO COMPASS ON THE GREAT LAKES STEAMER QUINCY A. SHAW OF THE M. A. HANNA CO.

the head phones for the *minimum* signal. To find this exactly he rocks back and forth across the minimum. The signal is heard on each side of the exact minimum. The minimum, or silent point, is his true bearing and it will be accurate within two degrees or less which is one-half of one per cent or less. He reads the bearing on his compass card which may be dumb, magnetic, or sperry repeater. The bearings on the radio compass are sharp as well as true.

The Great Lakes district is now favored with seven radio beacons maintained by the United States bureau of lighthouses. Four more are

under construction and two additional are projected.

Although radio compasses may be used in any part of the world where radio is used, the radio beacon is a valuable conjunctive aid for ships equipped with the radio compass, because it is designed especially for that purpose and no other. Radio beacons emit characteristic radio signals which are clear enough to be easily recognized by any navigator.

Appointed Chief Engineer Newark Terminal

H. R. Hanlin, president of the Mercur Trading Corp., New York, has announced the appointment of Herman W. Ordeman, as chief engineer with headquarters at the Newark Seaboard Terminal, Port Newark, N. J.

Mr. Ordeman is well qualified through his previous engineering work in the railway and terminal field to plan and supervise the improvements planned by the Mercur Trading Corp. for the terminal which it has recently leased from the United States government at Port Newark.

A graduate of Washington and Lee university, Mr. Ordeman has been construction engineer with the Atchison, Topeka and Santa Fe railway, division engineer of the Baltimore & Ohio railway, chief engineer of the United Terminals Inc. and has been engaged in consulting work in New York and vicinity on waterfront structures and terminals.

Mr. Ordeman is one of a number of specialists now engaged on a survey of the Newark Seaboard Terminal with the object of perfecting its future development as a railway, marine and storage terminal which will render maximum service to merchants and shippers here and abroad.

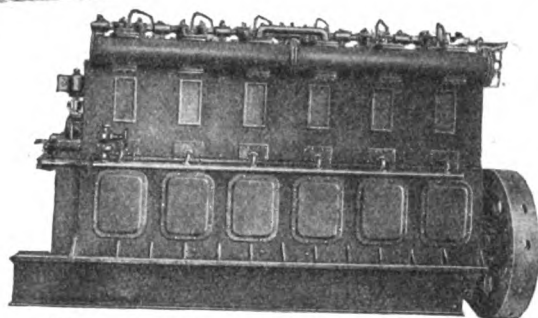
The speed of construction of the AUGUSTUS has set a record for Italian shipyards. The vessel was launched less than eight months from the day the keel was laid and is expected to be ready for her maiden voyage within seven or eight months.

"GOVERNOR MOORE"

New Diesel Electric Ferry, L. O. A. 155' 0"; W. 48' 0"; D. 8' 6". Powered with two 350 B. H. P. Nelseco Diesel Engines, Type 6MI-18. Capacity 50 automobiles.



First Diesel Electric Ferries in New York Harbor



Nelseco Diesel Engine of latest mechanical injection type, 350 B. H. P. at 280 R. P. M., Type 6MI-18.

A FLEET of six Diesel Electric Ferries has just been put in service between West 23rd Street, Manhattan and Weehawken, N. J. These vessels are the first of their type in New York—capacity 50 automobiles, no foot passengers carried.

Each ferry is powered with two 350 B. H. P. Nelseco Diesel Engines of the latest mechanical injection type. These engines are similar in design to the 24 Nelseco Diesels recently ordered by the Southern Pacific Railroad Company for use in ferry boats on San Francisco Bay.

You should ride on and inspect these new Diesel ferries for they are as radical a change from steam-propelled vessels as the first steam trains were over horse-drawn coaches.

You will be impressed with the smooth flow of power and the positive engine control just as the owners are impressed with the lower operating costs and the decreased personnel.

Nelseco engineers will gladly arrange an inspection trip and give you astonishing figures on the low operating cost of Diesel Engines for marine service. Write for Pamphlet MR.

NEW LONDON SHIP & ENGINE COMPANY
Groton, Conn., U. S. A.

Chicago Representative
H. JACOBSEN
25 North Dearborn Street

New York Sales Office
247 Park Avenue, New York

West Coast Representative
KING-KNIGHT CO.
Seattle, San Francisco, Los Angeles

NELSECO

Original licensees from and collaborators with M. A. N. since 1910

Please mention MARINE REVIEW when writing to Advertisers

Largest Diesel Tested

(Continued from Page 58)

tric Co. which has been in successful operation for the past seven months.

A more detailed description of this engine will be found on page 14 of the November issue of MARINE REVIEW.

The utmost care in workmanship and the choice of materials has been exercised in the building of the engine by a company who has an excellent reputation for building marine and stationary steam engines. Henrik Greger is the engineer in charge of designing and building this engine.

It is believed that the building of

this unit opens the way for the adoption of large diesel engines as the type is suitable for stationary as well as marine service. Its installation and trial in a shipping board vessel will be watched with great interest.

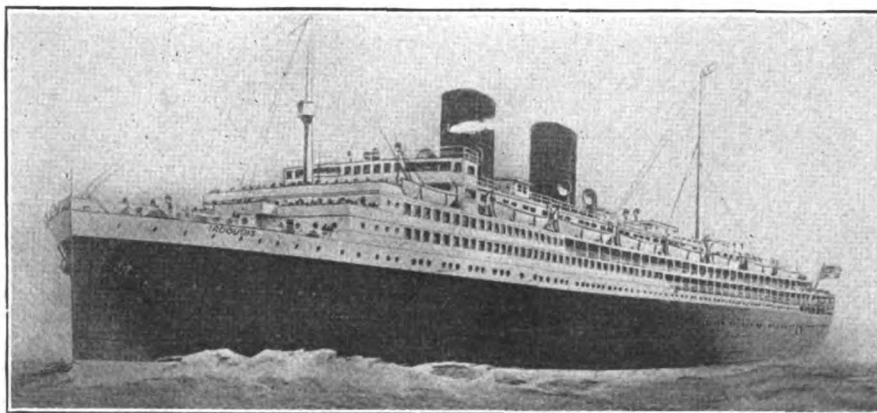
November Lake Levels

The United States lake survey reports the monthly mean stages of the Great Lakes for the month of November as follows:

Lakes	Feet above mean sea level
Superior	601.75
Michigan-Huron	578.22
St. Clair	573.92
Erie	571.52
Ontario	245.24

Lake Superior is 0.07-foot higher than in October and it was 0.69-foot higher than the low November stage of a year ago. Lakes Michigan-Huron are 0.10-foot lower than in October and they were 0.54-foot higher than the low November stage of a year ago. Lake Erie is 0.17-foot lower than in October and it was 1.07-feet higher than the low November stage of a year ago. Lake Ontario is 0.31-foot higher than in October and it was 0.93-foot higher than the November stage a year ago, 0.09-foot below the average stage of November of the last ten years.

Launch Miami Liner at Newport News



How new fast Miami liner will look when completed

THE launching of the new steam-steam, IROQUOIS, the largest and fastest passenger carrier ever built for the Atlantic coastal service, took place at the yard of the builders, Newport News Shipbuilding & Drydock Co., Newport News, Va., Dec. 11, 1926. A sistership, the SHAWNEE, is also under construction at the same yard and will be launched about the middle of January. These two vessels, and four other big passenger steamers built by this one company in the last two years will add 45,000 tons to its New York-Florida service, at an aggregate cost of \$14,000,000.

The Newport News Shipbuilding & Drydock Co. has been executing this comprehensive shipbuilding program under the direction of H. H. Raymond, president of the Clyde line. The building of this new fleet is the crowning achievement of Mr. Raymond's career, in a lifetime devoted to building up an American coast-wise service embodying the most complete, modern and luxurious passenger ships under the American flag. These great ships were designed by the dis-

tinguished naval architect, Theodore E. Ferris.

Following the custom of the Clyde



MARION SHUTTS

Sponsor at Launching of S. S. IROQUOIS

line in naming its new vessels after prominent Indian tribes, the new

steamer was christened IROQUOIS in honor of the famous member of the Five Nations, which in early days dominated the territory from Hudson bay to the Carolinas.

Miss Marion Shutts of Miami,

S. S. Iroquois Particulars

Steel Construction—Double Bottom Water Ballast Tanks for Stability at Sea

Length 408 feet
Beam 62 feet
Draft 20 feet 6 inches
Passenger capacity 733 persons
Freight capacity 178,400 cubic feet
Gross tonnage 6500 tons
Displacement (loaded) 8500 tons
Speed (average) 20 knots
Fuel oil capacity 7920 barrels
Steaming radius 5460 miles

Turbine engines.....10,200 shaft horsepower
Life Boat Equipment—Metallic life boats, including motor pilot boat. Welin mechanical davits. Total capacity for 890 people—approved for round-the-world service.

Special Devices—Automatic fire detecting apparatus, with steam, salt water and "Foamite" extinguishing systems. Condensing, evaporating, distilling and refrigerating plants.

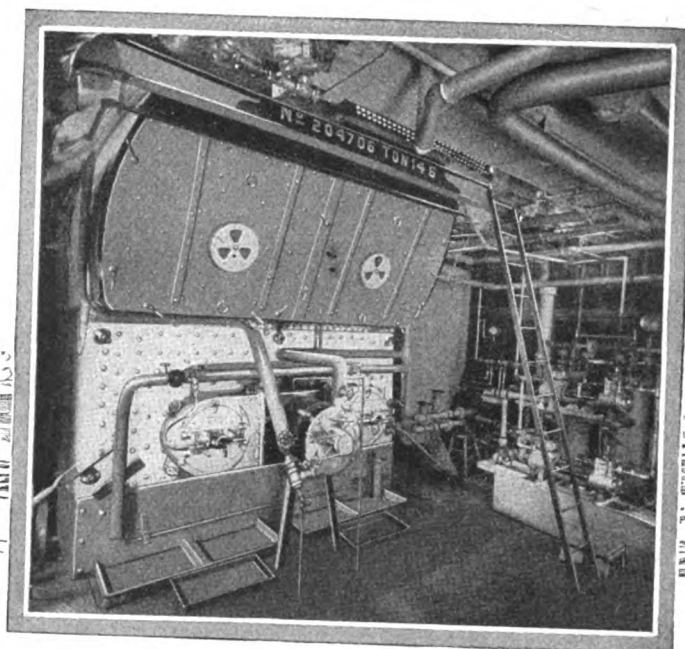
Interior Finish—White mahogany with golden tones; red mahogany with gray tones; also polished fumed oak. Artistic leaded glass domes and windows distributing uniform natural light throughout public places.

Ventilation—Furnished by mechanical devices with individual control in each inside stateroom; in corridors, passageways and public places as well as throughout the cargo decks.

Electrical Equipment—Fans and berth lights in each room. Vacuum cleaning system throughout. Unusually elaborate lighting and cooking equipment.

daughter of Col. Frank B. Shutts, publisher of the *Miami Herald*, christened the IROQUOIS and her maids of honor were Miss Betty Bowen and Miss Susanne Claussen, also of Miami. In honor of the occasion a number of prominent residents of Miami, including the mayor, E. C. Romfh, and Mrs. Romfh, attended the exercises.

Following the launching of the new IROQUOIS, the guests inspected the sistership, SHAWNEE, now under construction at the Newport News yards.



Boiler room of a New York Central tug showing typical Todd Fuel Oil Burning installation

NEW YORK CENTRAL Marine Department SAVES \$57.51 PER HOUR BY BURNING FUEL OIL

ACAREFUL comparison of fuel consumption was made by the Marine Department of the New York Central R. R. covering the year 1922 (the last year coal was used) and 1925 (the first year their entire fleet was converted to oil burning) with the following result:

TUG	LBS. OF COAL PER H.P. HOUR	LBS. OF OIL PER H.P. HOUR
A	2.69	1.30
B	2.51	1.30
C	2.33	1.16
D	2.51	1.32
E	2.37	1.27
F	2.78	1.42
G	2.82	1.40
H	2.64	1.41

Taking the average price prevailing for both fuels during 1925, for the entire fleet, the difference in cost per horse-

power hour was distinctly in favor of fuel oil, as follows:

	COAL	OIL	DIFFERENCE IN FAVOR OF OIL
Tug boats	\$0.009789	\$0.006858	\$0.002931
Steam lighters	0.011388	0.008856	0.002532
Ferry boats	0.005733	0.004570	0.001163

Applying these figures to the operation of their entire fleet per hour the actual amount of dollars and cents saved is:

	COAL	OIL	DIFFERENCE IN FAVOR OF OIL
Tug boats (13064)	\$127.88	\$89.59	\$38.29
Steam lighters (1800)	20.50	15.94	4.56
Ferry boats (12600)	72.24	57.58	14.66
Total saving per hour			\$57.51

Todd engineers are available at all times for consultation with owners or operators.

TODD DRY DOCK, ENGINEERING & REPAIR CORPORATION
Foot of 23rd Street, Brooklyn, New York



Please mention MARINE REVIEW when writing to Advertisers

What the British Are Doing

Short Surveys of Important Activities in Maritime
Centers of Island Empire

VICKERS LTD. of Barrow-in-Furness have received orders for three submarines to be built for the Admiralty. The craft will cost £500,000 each. The company is a pioneer in submarine construction, the first submersible boat having been built thirty years ago. During the war the company made the record of delivering three vessels on one day. The work will take about two years to complete but absolute secrecy is observed in regard to details. During the year Vickers Ltd. have launched a passenger and a cargo steamer, a cruiser of 10,000 tons and two submarines, representing 19,836 gross tonnage. In addition a floating dock and a dock gate caisson, each of 500 tons displacement have been completed.

* * *

THE event of the month has been the purchase of the White Star line by the Royal Mail Steam Packet Co. The effect of this will be to bring the Royal Mail tonnage up to over 2,700,000, the largest of any company in the world. The White Star line has a tonnage of over 550,000 and includes the famous **MAJESTIC**, **OLYMPIC**, and **HOMERIC**. The purchase is likely to have important consequences to Belfast as Lord Kysant, the chairman of the new owners

is also chairman of Harland & Wolff, and it is believed that continuity of work for Queen's Island the headquarters of Harlands, is assured. It is expected that the deal will cause some delay in proceeding with the 60,000-ton ship projected by the White Star company, as Lord Kysant will have to go into the matter himself.

* * *

THE SHAW, SAVILL AND ALBION & CO., who some time ago cancelled an order for a 20,000-ton motor liner, which they had placed with Swan Hunter & Wigham Richardson, Wallsend on Tyne, have now ordered two motor cargo vessels from that firm, the engines to be supplied by the Wallsend Slipway & Engineering Co.

* * *

THE month has been on the whole an active one, with regard to the placing of shipbuilding orders. A second order for nine new oil tankers has been placed in British yards by the Anglo Persian Oil Co. Ltd. Seven of them are large vessels with dead-weight of over 10,000 tons. The other two are 6400 tons each. The total of 18 ships ordered this year adds 170,000 tons to the company's fleet

making it over 700,000 tons and the tankers will number in all eighty. Of the new ships three are to be built by Palmer Shipbuilding & Iron Co., one by Swan Hunter & Wigham Richardson, two by the Caledon Shipbuilding & Engineering Co. Ltd., one by Greenock Dockyard Co. Ltd. and the two smaller ships by Sir W. G. Armstrong Whitworth & Co. Ltd. All the large vessels are to be diesel driven.

* * *

THE BURNTISLAND SHIPBUILDING CO., Fyfehire, have received orders to build a cargo steamer of 7500 tons for Cardiff owners, one of 9000 tons for London owners, and of 1000 tons for Glasgow owners. The machinery for the larger contracts will be supplied by David Rowan & Co., Glasgow and for the 1000-ton steamer by William Beardmore & Co., Coatbridge.

* * *

THE GREENOCK DOCKYARD CO. LTD. have received from the British Tanker Co. Ltd., London, an order for a motor-propelled oil tank vessel 440 feet in length and of 10,000 tons measurement. Internal combustion engines of the Burmeister and Wain type will be supplied by John G. Kincaid & Co. Ltd., Greenock.

What's Doing Around The Lakes

LAKE freighters carrying iron ore and limestone for the blast furnaces at Gary, Ind., established a new high record in tonnage shipped this year despite 17 fewer sailing days in 1926 than last season. The tonnage of both ore and stone was 6,044,000 tons, an increase over the previous peak established last year of approximately 50,000 tons. The season actually closed Nov. 27.

* * *

CEREMONIES marked the beginning of excavations for the straightening of the Chicago river on Dec. 17 when Mayor William E. Dever, of Chicago, turned the first

earth several hundred feet south and west of the west branch of the channel. Engineers immediately began the sinking of test bores. A further official celebration was held an hour later at a luncheon of the Chicago Association of commerce. Agitation for the river straightening was started a decade ago. Three years will be required for the project, it is estimated, and the cost will be \$9,000,000. The channel will be 200 feet wide and about 800 feet west of the present one, thus providing space for vast railroad terminal facilities and providing for relief of traffic congestion in the Chicago loop district by the

opening of new through streets.

* * *

THE Lake Calumet industrial harbor project, dropped a year ago after the state of Illinois refused to issue a permit for the work, again is under discussion by city officials of Chicago. Under the old harbor development ordinance, the Nickel Plate railroad was to have constructed a channel two and a half miles long between the Calumet river and Lake Calumet at a minimum cost of \$600,000 in exchange for submerged land to be filled in by constructing the channel. One of the objections emphasized by the Illinois superintendent

Thorkote

*Fore and After Peak Tanks Domestic and Fresh Water Tanks Coal Bunkers and Chain Lockers
Tank Tops and Bilges Propeller Shafts Standing Rigging, Etc.*

The perfect anti-corrosive paint for the positive and economical protection of

Particularly suitable for confined spaces.

An emulsified asphalt that can be easily applied cold and retains all the properties of the original asphalt after it has set up.

Contains no volatile oils or solvents, gives off no fumes, and is tasteless.

Thorkote Plastic

A protection for insulation on boilers, tanks, steam lines, etc., absolutely waterproof and airtight.

"Airtight protection to the insulating substance is the key to permanent insulation regardless of the kind of material used—and there is absolutely no exception".

Also for decking—a mastic flooring.

Literature and lists of satisfied users furnished upon request.

Thorkote Products Company, Inc. 135 Liberty St.,
New York City



PARSONS' WHITE BRASS S. A.

in one of the large freighters on the lakes.

The S. S. William G. Mather's Bearings

Conforming to a general plan of safety and uninterrupted service as determined upon by the Cleveland-Cliffs Iron Works, owners of the vessel, the main bearings, crank-pin bearings and thrust bearings are supplied with the best lining metal obtainable—PARSONS' WHITE BRASS S.A. Its uniformity and durability ensure efficient service voyage after voyage.

The metal's high physical qualities, viz. elastic limit under compression, hardness as shown by the Brinell

test and low co-efficient of friction ensure its durability, while the reputation of its makers is a guarantee of its uniformity.

It is quickly melted, easily poured and easily machined. In the final analysis it is cheaper than other babbitts because replacements are fewer.

Stocks kept in Baltimore, Boston, Buffalo, Chicago, Cleveland, Detroit, Galveston, Mobile, New Orleans, New York, Philadelphia and San Francisco. Write for prices to

THE WILLIAM CRAMP & SONS SHIP & ENGINE BLDG. CO.
PHILADELPHIA

Please mention MARINE REVIEW when writing to Advertisers

ent of waterways was that \$600,000 is insufficient to pay for the rights given the road at a rate of 45 cents a cubic yard for the dredging. New offers on the dredging, which may bring it down as low as 25 cents a cubic yard, have been made to Chicago city officials recently, it is reported.

LEASING of the old Illinois-Michigan canal, which was abandoned in 1900 in favor of the Chicago sanitary district canal, is being advocated. The theory is that the canal might be leased and filled in. It is claimed that some companies already are utilizing

the canal frontage, which is public property. Two years ago voters turned down leasing approval of this canal. From 1848 to 1900 the canal had been a constant study. It provided a waterway from Lake Michigan to the Illinois river and served as a partial outlet for the sewage and drainage. The canal proved inadequate, however. The most recent proposal is to rent the canal property for at least 6 per cent per year of the valuation of the property, the lessee to pay the taxes.

SCHEDULES of Great Lakes passenger carriers have been thrown

awry in the closing days of December by heavy winds and slush ice in harbors. Some of the boats at the St. Joseph, Mich., harbor were delayed most seriously, as slush ice became pocketed there more severely than at some of the other harbors. The Goodrich Transit Co. is maintaining regular passenger schedules to Muskegon and on the Milwaukee division. On the Chicago, St. Joseph and Holland division delays have been more frequent. December package freight shipment on Great Lakes boats fell off as compared with December last year.

Ocean Freight Rates

Per 100 Pounds Unless Otherwise Stated

Quotations Corrected to Dec. 20, 1926 on Future Loadings

NOTE: FREIGHT RATES STEADY WITH MARKED INCREASE TO SOME PORTS

New York			Cotton		General cargo	††Finished	REMARKS	From North Pacific	Lumber
to	Grain	Provisions	(H. D.)	Flour	cu. ft.	100 lbs.	steel Freight Offered	Ports to	Per m. t.
Liverpool.....	4s 0d	\$0.60	\$0.60	0 35	\$0 50	\$0.90	\$8 00T***	Good	San Francisco..... \$4.50 to 5.00
London.....	4s 0½	0 60	0 35	0 50	0 90	8 00T***	Fairly good	South California..... 4.50 to 5.00
Oslo.....	\$0 25	0 50	0 50	0 35	0 50	1 00	8 00T	Poor	Hawaiian Islands..... 9.00 to 10.00
Copenhagen.....	0 25	0 50	0 50	0 35	0 50	1 00	8 00T	Poor	New Zealand..... 16.00 to 19.00
Hamburg.....	0 20	0 55	0 50	0 28	0 50	0 90	10 00T	Good	Sydney..... 13.00 to 14.50
Bremen.....	0 20	0 45	0 50	0 28	0 50	0 90	10 00T	Very good	Melbourne-Adelaide..... 13.50 to 14.50
Rotterdam and Amsterdam.....	0 20	0 32½	0 60	0 35	0 45	0 80	9 50T	Fair	Oriental Ports..... 9.50 to 10.50
Antwerp.....	0 20	0 32½	0 50	0 35	0 45	0 80	9 50T	Fair	Oriental Ports (logs)..... 13.00 to 15.00
Havre.....	0 20	0 55	0 50	0 35	0 45	0 80	8 00T	Fair	Peru-Chile..... 12.50 to 14.00
Bordeaux.....	0 20	0 55	0 50	0 35	0 45	0 80	8 00T	Fair	South Africa..... 18.00 to 22.00
Barcelona.....	.....	12 00T	0 60	10 00	—12.00T—	10.00 to 15.00T	Brisk	Cuba..... 15.00 to 17.00
Lisbon.....	.....	0 75	0 50	8 00T	—23 00T—	8 00T	Fair	United Kingdom..... 95s to 110s
Marseilles.....	.....	0 65	0 40	7 00	—23.00T—	6.00T	Fair	United Kingdom (ties).....
Genoa.....	0 20	14 25	0 50	9 00	—23.00T—	11 50T	Fair	Baltimore-Boston range..... \$14.00 to 15.00	
Naples.....	0 20	14 25	0 50	9 00	—23.00T—	11 50T	Fair	Florida Range..... No rates	
Constantinople.....	0 50	20.00T	0 85	0 48	—24.00T—	10 50T	Good	Buenos Aires..... 15.00 to 17.00	
Alexandria.....	.....	20 00T	0 85	0 48	—24.00T—	10 50T	Good	Flour and Wheat
Algiers.....	.....	0 85	0 60	0 45	—23.00T—	11 50T	Fair	U. K. and Continent (gross ton)..... 42s 6d to 45s 0d
Dakar.....	.....	17.00	.....	15.50T	—23.00T—	11 50T	Fair	Oriental Ports (net tons)..... \$4.25 to 5.25
Capetown.....	.....	.....	.....	.....	.....	.....	.....	.....
Buenos Aires.....	.....	20.00T	.....	.....	—20.00T†	8.00T	Fair	.....
**Rio de Janeiro.....	.....	22.00T	.....	8.00T	20.00 to 22.00T†	7.00 to 7.70T†	Fair	.....
Pernambuco.....	.....	22.00T	.....	9.00T	—22.00T—†	9.70T†	Fair	.....
Havana.....	0 22½*	0 50	.....	0 25*	.....	4 00	Very good	.....
Vera Cruz.....	.....	0 30	0 35	0 25	0 52½	1 05	0 30 to 0 35	Very good
Valparaiso.....	.....	1 07	.....	0 70	0 45	0 80	10 00T	Fair
San Francisco.....	.....	0 35 to 0 70	.....	0 50 to 1 10	.....	.....	0 25 to 0 80	Good
Sydney.....	.....	18.00T	1 25	18.00T	18.00-24.00T	9.00-12.00T	Fair	.....
Calcutta.....	.....	.....	0 75	10.00T	—16.00T—	10.00T	Fair	.....

T—Ton. †Per quarter of 480 lbs. †Landed. ††Heavy products limited in length. *Extra charge for wharfrage. **Plus \$0.50 surcharge on all rates to Rio de Janeiro on account of congestion. ***Plus 15 per cent.

Principal Rates To and From United Kingdom

	s	d		s	d
Grain, River Plate to United Kingdom.....	35	6	Pig iron, United Kingdom to New York or Philadelphia.....	—	—
Coal, South Wales to Near East.....	13	0	Iron ore, Bilbao to Cardiff.....	5	10
Coal, United Kingdom to Buenos Aires.....	16	0	Iron ore, Huelva to Phila. or Balto.....	11	6
Manganese Ore, Poti to Philadelphia.....	\$5.75	—			

Bunker Prices

At New York

	Coal alongside per ton	Fuel oil alongside per barrel	Diesel engine oil alongside per gallon
Jan. 2, 1926.....	5.50 @ 5.25	1.75 @ 1.80	5.25c
Mar. 18.....	5.60 @ 5.80	1.80½	5.50
Apr. 22.....	5.25 @ 5.60	1.80 @ 1.81½	5.75
May 19.....	5.25 @ 5.60	1.80½	5.88
June 18.....	5.50 @ 5.60	1.80½	6.08
July 20.....	5.00 @ 5.60	1.80½	6.08
Aug. 12.....	5.00 @ 5.60	1.81½	6.10
Sept. 18.....	5.45 @ 6.00	1.81½	6.05
Oct. 22.....	7.25 @ 7.50	1.70½	5.86
Nov. 19.....	7.00 @ 7.50	1.81½	5.87
Dec. 20, 1926.....	6.25 @ 6.50	1.81	5.86

At Philadelphia

	Coal trim. in bunk per ton	Fuel oil alongside per barrel	Diesel Eng. oil alongside per gallon
Feb. 18, 1926.....	5.80	1.78 @ 1.86½	5.14 @ 5.50c
Mar. 18.....	5.00 @ 5.25	1.80 @ 1.86½	5.40 @ 5.65
Apr. 22.....	5.25	1.77 @ 1.86½	5.50 @ 5.93
May 19.....	5.25 @ 5.70	1.82 @ 1.86½	6.15 @ 6.38
June 18.....	4.50 @ 5.15	1.80 @ 1.86½	6.15 @ 6.43
July 20.....	5.10 @ 5.50	1.74 @ 1.81½	5.09 @ 6.15
Aug. 12.....	5.00 @ 5.25	1.69 @ 1.74½	5.75 @ 6.17
Sept. 18.....	5.00 @ 5.35	1.74 @ 1.74½	6.14½
Oct. 22.....	7.25 @ 7.50	1.74 @ 1.80½	5.66 @ 5.88
Nov. 19.....	7.00 @ 7.50	1.80½ @ 1.81	5.43 @ 5.88
Dec. 20, 1926.....	5.50 @ 5.75	1.80 @ 1.90½	5.64 @ 6.19

Other Ports

Boston, coal, per ton.....	\$9.32
Boston, oil, f. a. s., per barrel.....	\$1.79
Hampton Roads, coal, per ton, f. a. s., piers.....	\$5.25
Dec. 10 — Cardiff, coal, per ton.....	35s 0d
London, coal, per ton.....	—d
Antwerp, coal, per ton.....	—d
Antwerp, Fuel oil, per ton.....	77s 6d
Antwerp, Diesel oil, per ton.....	97s 6d
British ports, Fuel oil.....	85s 0d
British ports, Diesel oil.....	100s 0d

NOTE: Lighterage rates on fuel in New York reduced from 6½ to 5½c per barrel. The coal strike in Britain is now settled and freight rates or bunker prices for coal or pig iron are again quoted.

General cargo rates to Havana change daily and are omitted for the time being.

Rates to Calcutta are subject to change without notice. Cotton goes only to Bombay.



*Then only, far under in the
depths of her hold,
Some gleam of its wonder
man's eye may behold.*

Swinbourne.

EACH beam, each well fitted timber,
each sturdy rib and plank strong
enough to stand the wildest gale,—
and she's tight if properly caulked.

The experienced sailor knows the
value of tight seams—no one need
tell him that—but thousands of
ships on the seven seas assure him
that his seams will be *tightest* when
caulked with

STRATFORD OAKUM

For almost a century Stratford
Oakum has caulked the seams of the
finest vessels that sail the seas.

Be sure you get genuine Stratford
Oakum. There is no other "just as
good."

GEORGE STRATFORD OAKUM COMPANY
*Jersey City,
New Jersey.*

Also manufacturers of Cotton Wiping Waste

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WHITLOCK PAT'D AUG. 3, 1926. REG. U.S. PAT. OFF. WATERFLEX CORDAGE

Thoroughly
water-resisting



Permanently
lubricated



Easy to handle and
splice—wet or dry



Does not swell,
harden or kink



Always remains
flexible



Lasts longer



Costs no more



Write for descriptive folder

WHITLOCK CORDAGE COMPANY
46 South Street, New York

*Factory and Warehouse
Jersey City, N. J.*

*Branches
Chicago, Boston, Kansas City
and Houston*

Equipment Used Afloat, Ashore

A Protective and Anticorrosive Covering for Marine Use

THE problem of adequately protecting metal surfaces in marine work has received a great deal of attention because of the severe conditions, tending to quick deterioration, this class of work is subjected to. The Thorkote Products Co. Inc., New York, several years ago developed a protective covering which has been given the trade name of Thorkote. It is produced in both cement and plastic form and has pure asphalt as a base and it is claimed, fully meets the particularly difficult requirements of marine service.

Pure asphalt has long been recognized and used as the most dependable, permanent, and reliable protective material for all surfaces affected by water, acid, alkalies and corrosive gases of every nature. But heretofore the only practical means of applying pure asphalt, has been to apply it hot, an inconvenient, costly and not entirely satisfactory method.

From time to time attempts have been made to discover some solvent or cut-back which could be used with asphalt so that it might be applied cold. By the very nature of the solvents the original properties of the asphalt were invariably destroyed in these attempts.

Practical use of the product known as Thorokote, demonstrating its lasting properties, indicates that the problem of depositing a pure asphalt coating without heating, without using cut-back and without special equipment or highly skilled labor has been solved. It is made in the following manner. Pure asphalt is dispersed in water by a process known as emulsification and is carried on as follows: A given pure asphalt is broken up into minute particles of 1/5000 to 1/10,000 of an inch in diameter, in the presence of water and a small percentage of an inert mineral colloid. This is done by running pure asphalt into especially designed machines which break up the asphalt mechanically and keep the small parts separated by the water.

When this material is applied, by brush, trowel, or by spraying, the water evaporates and the small particles of unchanged asphalt coalesce. The result is a homogeneous coating of the original pure asphalt with its inherent qualities unimpaired so that the coalesced film has all the elasticity and ductility that are proper-

ties of the original asphalt of which the emulsion was originally made. After the film of emulsion has dried out it will not flow, flux or bleed at comparatively high temperatures.

The base of this product is asphalt whether in cement or plastic form, and therefore, it has all the protective properties of this substance. It has been said by Madison Cooper, an authority on insulation that, "air-tight protection to the insulating substance is the key to permanent

Fastest Ocean Liners Order in Germany

Plans for the addition of two new vessels, larger than the COLUMBUS, to the North Atlantic fleet of the North German Lloyd, were recently announced from Bremen. The liners, which are described as enlarged and improved vessels of the COLUMBUS type, are to have a gross register of 46,000 tons each. They are to be named the BREMEN and the EUROPA, and are to be employed in the Bremen-New York service.

They will have a speed of 27½ knots which will make them the fastest ships afloat and will enable them to make the run between New York and Bremen in six days and from New York to the channel ports of Plymouth and Cherbourg in five days. The BREMEN is to be built by the Aktien Gesellschaft Weser in Bremen and the EUROPA is to be built by Blohm & Voss, Hamburg. The COLUMBUS, which has a gross register of 32,354 tons, was built in the Schichan yard, Danzig, in 1922.

insulation regardless of the kind of material used—and there is absolutely no exception." This product is therefore, of special value and is becoming widely used as protection for the insulation on boilers, tanks, deck steam lines and other insulated parts aboard ship. In one form or the other it may be used as a protective agent against corrosion everywhere on board ship. It is used on the hull, in the holds, the rudders, boilers, decks, inner bottom, brine coils, fresh water tanks, tail shafts, coal bunkers and many other places aboard ship.

Marine Section Meets

An executive committee meeting of the marine section of the National Safety council was held on Dec. 15, at the offices of the Texas Co., 17 Battery place, New York. The meeting was well attended by member companies as well as by representatives of other interested steamship lines. The meeting was called to order by W. P. Kain, chairman of the marine section.

The marine section is composed of numerous large and small steamship operators and allied industries interested in promoting safety at sea on their vessels and who are determined to reduce the large number of avoidable marine accidents to their personnel. Reduction of accidents on board ship is naturally a feature of vital interest to every steamship operator from a humanitarian standpoint as well as good business.

Among the speakers at the executive committee meeting were: Robert F. Hand, assistant manager of the marine department, Standard Oil Co. of New Jersey; Alexander Hynd, marine superintendent, Garland Steamship Corp. and Arther M. Tode, superintendent, technical division, marine department of the Texas Co.

During the round table discussions which followed a number of members spoke of their experiences in reducing accidents, safeguarding of hazardous conditions and methods employed in supervising and educating their seagoing personnel. Full information as to the important work being carried on by the marine section can be obtained by addressing Arthur M. Tode. The Texas Co., 17 Battery place, New York city.

Launch Liner Augustus

The daughter of Premier Mussolini, Signorina Edda Mussolini, christened the motorship AUGUSTUS when this vessel was launched at Genoa, Dec. 13. The AUGUSTUS will be the largest ship driven by internal combustion engines in the world. In the AUGUSTUS, SATURNIA and VULCANIA, Italy will have the three largest diesel ships in existence.

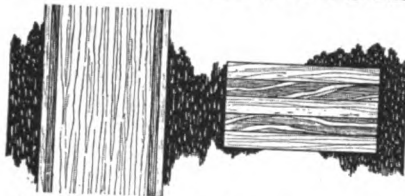
Of 33,000 tons, the AUGUSTUS is 703 feet long and 82½ feet wide. Four propellers are direct driven.

WELDWOOD

Layers of wood welded together
with a water resistant cement
for

**Bulkhead Construction
Ceilings, Walls, Door Panels
Drawer Bottoms**

furnished in all hard and soft woods. Will not warp or buckle, stands by itself. Requires no backing. Requires $\frac{1}{3}$ less paint than composition material, by actual test. Low first cost.



5 ply construction of Weldwood in hard woods. Welded with same water resistant cement used in U. S. Aircraft propeller construction.

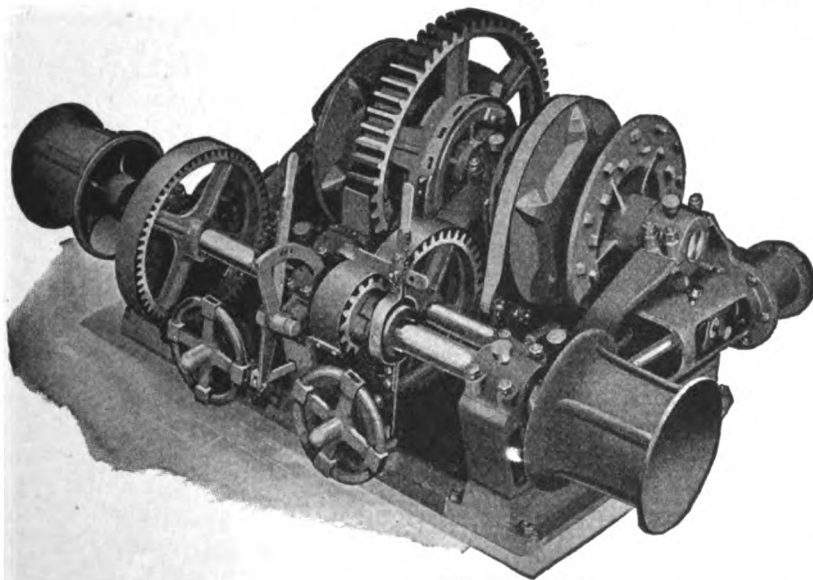
5 ply construction of Weldwood in soft woods. Welded with same water resistant cement used in U. S. Aircraft propeller construction.

*Technical service of our
engineers at your service.
Catalog with prices on request.*

Weldwood reduces the weight above the water line. Ample stocks maintained for quick deliveries. Naval architects can choose from stocks at New York and Detroit.

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Reviews of Late Books

Steel Ships, Their Construction and Maintenance, by Thomas Walton; published by J. B. Lippincott Co., Philadelphia and furnished by MARINE REVIEW, Cleveland for \$14.00, post-paid and in Europe by The Penton Publishing Co., Ltd., Caxton House, London, for £3.

The first edition of this book came out at London in June 1901. It immediately established itself as one of the authoritative works on shipbuilding and it was widely used as a reference book by students, naval architects, ship builders and marine superintendents charged with the supervision of new construction and up-keep of existing fleets. In the preface to the first edition the author stated that it had taken four years to complete his work.

Twenty-five years having passed since the first edition was published and since marked progress has been made in the science and craft of shipbuilding and many changes have taken place in design and practice it was thought well to bring out a revised and larger edition of the original work of Thomas Walton. This was so especially in view of the fact there has been a steady demand for the book indicating that it holds a useful place in the literature of naval architecture and that deep interest still exists in one of the largest and most fascinating of industries. Due to the untimely death of the author the revision has been carried on by another (John King), but as far as possible the general scope of the book as originally produced has been retained.

Some of the chapters have been modified in plan and extended to include present day practices. The book has also been divided into two parts. Part I is principally devoted to a study of the strength of ships a subject which is, in view of the insistence on economy of material, becoming of great importance and technical interest. Part II deals with some aspects of practical shipbuilding and the maintenance of ships.

The functions of the classification society and their influence in the determination of the scantlings of classed ships is fully treated. Each of the principal members comprising the construction of ships is described in relation to each other and their usual forms and connections. Tonnage, free board, strength and requirements of trade are discussed as

to their influence in determining the type and structural features of ships. Certain practical illustrations are given of special types of ships to satisfy particular conditions. The MAURETANIA is described. Some space is devoted to sailing and auxiliary ships and to the special features of design and details of tankers.

A number of other chapters are devoted to the principal features of the design of modern ships and their construction with particulars of details of the structure, sterns, stern posts, rudders, masts, derrick posts and ventilation. Shipyard work and launching problems are also treated including modern practice in shipbuilding such as welding, in place of riveting.

The last chapter of the book (9) deals with the after care of ships and the means of preventing rapid deterioration, the nature and causes of corrosion and the preservatives of steel, paint, cement and bituminous mixtures. The survey of ships is described in some detail and also repairs and renewal of steel and wood.

Sell White Star Line

The long talked of sale of the White Star Line has finally taken place, not to the original bidders Furness, Withy & Co. but to the Royal Mail Steam Packet Co. making the latter company the largest steamship company in the world. The transaction involved the payment of £7,000,000 (\$34,000,000) to the International Mercantile Marine Co. The sale included 21½ ships under the White Star flag in the north Atlantic and Australian trades, six steamships of the Aberdeen White Star Line, 44 per cent of the seventeen steamships of the Shaw, Savill and Albion Co. operating from London to Australia via the Panama canal. The half ship is 50 per cent of the freighter DELPHIC, the other half being owned by the Atlantic Transport Line. In the sale is also included the S. S. LAURENTIC, 17,000-ton passenger steamer nearing completion at Harland and Wolff, for the Canadian trade, and the plans for the 62,000-ton liner OCEANIC, which have been prepared, and an order for which it was understood, had already been placed with Harland and Wolff, though the motive power has not been definitely de-

cided upon and construction has not yet been started.

Lord Kysant who is head of the Royal Mail Steam Packet Co. is now the most powerful shipping magnate in the world's most powerful shipping country. His photograph is published in this issue of MARINE REVIEW on Page 49.

Add Double Line Unit to Pumping Fleet

On Dec. 1, 1926 the steam, seagoing tug H. J. WHEELER was completed for the Salvage Process Corp. equipped under the Wheeler system for the pumping of oil sludge, gases and other substances from tanks, double bottoms, bilges and other receptacles.

The H. J. WHEELER formerly known as the LIGHT HORSE, was built in 1919 at Fore River, Mass. The WHEELER is 147 feet long, 31 feet beam, 421 tons gross and 223 tons net. She is equipped with two scotch boilers. Oil is used for fuel with the Coen oil burning system.

During the last six and one-half years the Wheeler system has been operating in New York harbor. Over 6000 tanks on more than 1200 vessels have been successfully cleaned by this system. It has been demonstrated that where this system is used repairs and other work on oil tanks may be carried on with safety.

Until Oct. 1, 1926 the patents covering this system were owned by the Wheeler Salvage Co., Inc. On that date all the Wheeler, Armstrong and Engstrand cleaning patents owned by the Wheeler company, together with the Wheeler equipment were purchased by the Salvage Process Corp., 30 Broad street, New York, and 224 Bush street, Brooklyn, N. Y. The Salvage Process Corp. is carrying on the work in New York harbor and endeavoring in every way to increase the efficiency of operation of the Wheeler system.

Realizing that speed of operation and prompt attention are vital to ship owners and repair companies the new tug H. J. WHEELER was added to the fleet. Prior to Dec. 1, 1926 the fleet consisted of one tug and three barges, each equipped with one suction line. The recent addition is a powerful tug, which means more rapid movement of all the company's vessels, and the new unit is equipped with a powerful vacuum pump and two suction lines. The pumping capacity of the fleet is increased by more than one-third of its former capacity.

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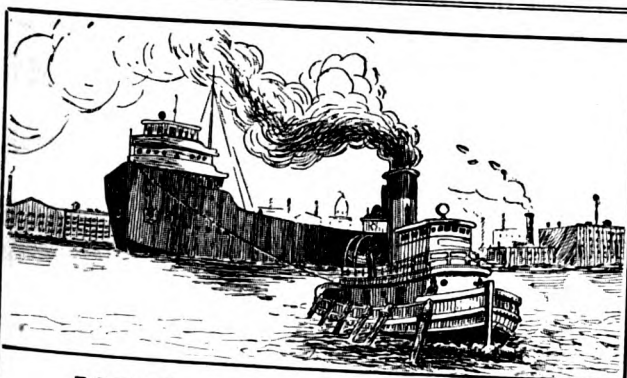
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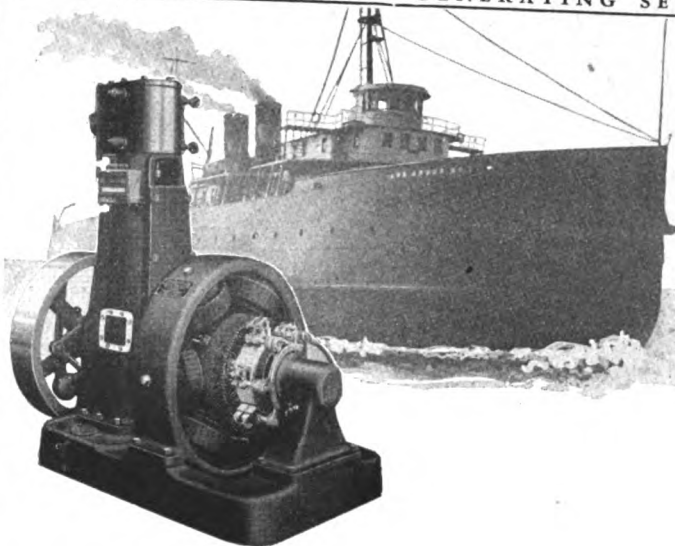
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Late Flashes On Marine Disasters

Brief Summaries of Recent Maritime Casualties—
A Record of Collisions, Wrecks, Fires and Losses

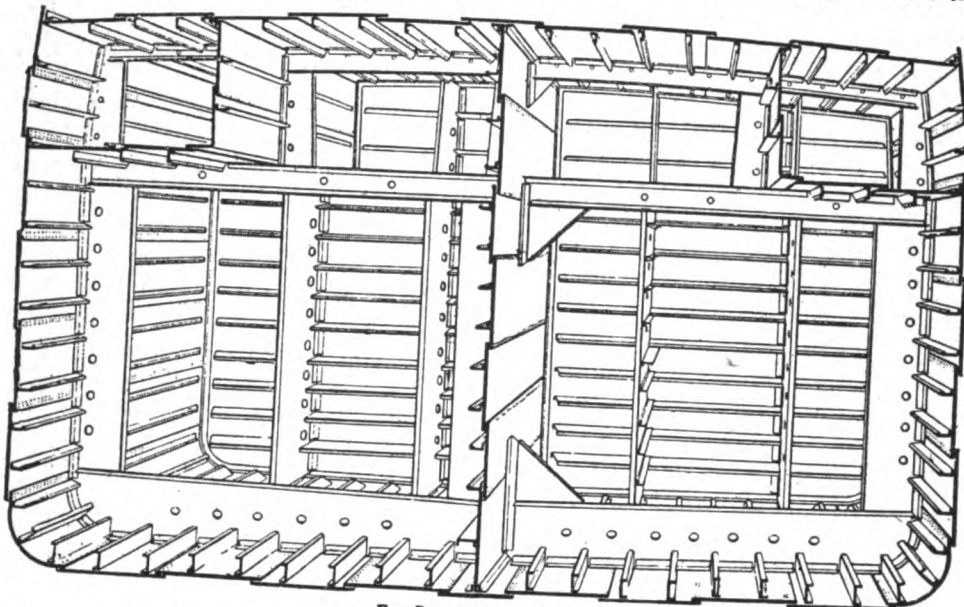
NAME	DATE	NATURE	PLACE	DAMAGE RESULTING	NAME	DATE	NATURE	PLACE	DAMAGE RESULTING
A. D. MacTier	Oct. 21	Ashore	Cape Despar	Total loss	Lio	Oct. 17	Collision	Quarantine	Not stated
Ara	Oct. 15	Collision	River Mersey	Bows	Levuka	Oct. 21	Ran on rocks	St. John	Floated
Antonio Lopez	Oct. 20	Hurricane	Havana	Damaged	Lelia	Oct. 26	Ashore	Nr. Canso	Total loss
Assimacos	Oct. 26	Collision	Off Sewalls Pt.	Damaged	Louisiana	Oct. 27	Collision	New Orleans	Sank
Agility	Oct. 7	Collision	Rotterdam	Not stated	Lake Chelan	Oct. 4	Collision	Philadelphia	Not stated
Admiral Jaureguiberry	Oct. 13	Aground	Rosario	Not stated	Lairg	Oct. 18	Struck ground	Goderich	Forepeak
Aurania	Oct. 13	Collision	Off Flushing	Starboard bow	Latvis	Oct. 21	Ashore	Sardynuel	Floated
Angelo Viglienzoni	Oct. 18	Fire	Off Spezia	Sank	Lake Wimico	Nov. 1	Aground	Bubits Gap	Floated
Artemis	Oct. 19	Aground	Braila	Not stated	Lumen	Nov. 8	Disabled	Falmouth, Eng.	Machinery
Anna	Oct. 21	Sank	Baltic	Not stated	Lake Treba	Nov. 1	Aground	Mobile	Floated
Ariagi Mendi	Nov. 9	Fire	Hull	No. 2 hold	Marianne	Oct. 21	Collision	Nr. Gluckstadt	Sank
Atlantida	Oct. 20	Hurricane	Havana	Badly	Motier	Oct. 22	Ashore	Lower St. Lawrence	Not stated
Bainbridge	Oct.	Disabled	Nr. Chicago	Rudder	Michigan	Nov. 8	Disabled	Havre	Leaking
Barcelona	Oct. 20	Hurricane	Havana	Damaged	Munleon	Oct. 20	Hurricane	Havana	Super-structure
Brunswick	Oct. 19	Fire	Awensdow, SC	Not stated	Mareuilandale	Oct. 26	Ashore	Shelter Bay	Not stated
Bethayres	Oct. 20	Sank	Off Shinnecock	Not stated	Mcntreal Maru	Oct. 15	Fire	San Francisco	Lower hold
Berkshire	Nov. 5	Aground	Miami	Floated	Mactier	Oct. 22	Ashore	Cap d'Espoir	Abandoned
Buenos Aires	Oct. 6	Aground	Pender Island	Leaking	Manukai	Oct. 25	Collision	San Francisco	Starboard
Britta	Oct. 6	Aground	Kilrush Creek	Not stated	Manchester Shipper	Oct. 26	Collision	Off Kaiohns Pt.	Stem; bow; plates
Betsy Anna	Oct. 13	Heavy Seas	London	Sank	Michigan Central	Oct. 27	Sank	Nr. Drummond Isl.	Not stated
Balholm	Oct. 19	Ashore	Off Drager	Not stated	Madison	Oct. 27	Collision	New Orleans	Not stated
Beckenham	Oct. 21	Aground	Rotterdam	Not stated	Martiniue	Oct. 4	Collision	Philadelphia	Not stated
Central West	Oct. 22	Struck Bridge	Toledo	Hawse pipe	Marie	Oct. 4	Collision	Off Brest	Sank
Clifford Moll	Nov. 2	Struck pier	Lorain	Plates	Moan	Oct. 6	Struck rock	North Sydney	Stem; bot-
Chaumont	Oct. 16	Disabled	Off San Diego	Engine	Martinez Rivas	Oct. 11	Collision	Higham Bight	Starboard
Caledonian	Oct. 17	Collision	Quarantine	Port side	Marie	Oct. 14	Collided pier	Holtenu	Propeller
Coney Island	Nov. 2	Fire	Off Pt. Richmond	Considerable	Manchurian Prince	Oct. 15	Ashore	Nr. Blankenese	Floated
Carlin	Nov. 5	Disabled	Not stated	Steering gear	New York News	Oct. 26	Ashore	Shelter bay	Not stated
Corsican Prince	Oct. 6	Collision	Off Stapleton	Not stated	Newport	Oct. 20	Collision	Portland, Ore.	Bow
Clio	Oct. 7	Ashore	Middelgrunden	Floated	Neches	Oct. 23	Fire	Mobile	Not stated
City of Brussels	Oct. 14	Ashore	River Scheldt	Floated	Odysseus	Oct. 11	Ashore	Nr. Cuxhaven	Not stated
Corcorat	Oct. 21	Collision	Nr. Gluckstadt	Not stated	Overstone	Oct. 21	Collision	Gravesend	Not stated
Dawson	Oct. 13	Struck rock	Nr. Carmacks	Sank	Oakpark	Nov. 4	Fire	New York	Nos. 4 and 5 holds
David R. Lake	Oct. 18	Sank	Above Reedy Isl.	Raised	Pioneer	Oct. 16	Fire	Off Cape Cod	Total loss
Duquesa	Oct. 18	Collision	Gravesend	Not stated	Patria	Oct. 20	Hurricane	Havana	Damaged
Davenport	Nov. 11	Disabled	Off Ambrose Channel	Steering gear	Plymouth	Oct. 17	Collision	Off Island Light-ship	Considerable
Emperor	Oct. 25	Ashore	Nr. Bois Blanc Island	Floated	Purnell T. White	Oct. 21	Disabled	N.E. Cape Look-out	Leaking
England Maru	Oct. 16	Ashore	Nr. Saratoga	Floated	Ponce	Oct. 6	Ashore	Ratones Island	Floated
Eleanor	Oct. 18	Collision	Texas City Channel	Considerable	Penthaw	Oct. 8	Collision	Gravesend	Not stated
Edward L. Doheny	Oct. 19	Disabled	S.W. of Tampa	Prop., tail shaft	Pallas	Oct. 12	Collision	Tangier	Damaged
Eastway	Oct. 22	Disabled	Off St. Augustine	Not stated	Plas Dinam	Oct. 20	Ashore	Harbour Grace	Floated
Everett	Oct. 28	Fire	No. of Pt. Gorda	Abandoned	Polaris	Oct. 22	Collision	Off Cuxhaven	Plates
Ethelatic	Oct. 30	Ashore	Nr. Cobbs Island	Floated	President Harrison	Nov. 7	Ashore	Nr. Shanghai	Bottom-floated
Estrella	Nov. 10	Fire	Buenos Aires	Cargo	Robin Gray	Oct. 25	Collision	San Francisco	Not stated
Frogner	Oct. 23	Struck wreck	Not stated	Prop.; tail-shaft machinery	Reine Marie Stewart	Oct. 24	Collision	Norfolk	Not stated
Favonian	Oct. 27	Ashore	Three Fathom Harbor	Waterlogged	Romo	Oct. 18	Collision	River Thames	Bows
Fredensbro	Oct. 26	Collision	Off Kaiohns Pt.	Sank	Rosandra	Oct. 13	Fire	Port Said	Super-structure
Faleria	Oct. 26	Collision	Off Sewalls Point	Damaged	S. B. Coolidge	Oct. 18	Aground	Cleveland	Floated-plates
Franken	Oct. 8	Ashore	Nr. Gluckstadt	Not stated	S. H. Robbins	Oct. 19	Disabled	Pelee Passage	Wheel
Franklin	Oct. 15	Collision	Bodo	Not stated	Swiftarrow	Oct. 18	Collision	Texas City Chn.	Considerable
Fullerton Rose	Oct. 14	Collision	Rotterdam	Not stated	Shepherd King	Oct. 21	Fire	Dog Island	Total loss
Falkenfels	Oct. 21	Collision	Nr. Altona	Starbd. bow	Solano	Nov. 3	Ashore	Point Arguello	Floated
Glenlochie	Nov. 1	Struck	Welland Canal	Plate	San Leopoldo	Oct. 4	Explosion	N.W. Progreso	Not stated
G. J. Grammer	Nov. 5	Struck obj.	St. Clair Flats	Tail shaft	Skipper	Oct. 7	Wharf	Burin	Considerable
Guide	Oct. 16	Sank	St. Lawrence River	Not stated	Saint Simon	Oct. 11	Leak	W. Fecamp	Sank
Grand	Oct. 20	Hurricane	Havana	Damaged	Salvatrice Giuffrida	Oct. 8	Collision	Antwerp Roads	Port side
General Botha	Oct. 21	Ashore	River Shannon	Floated	Spanker	Oct. 21	Fire	Northfleet	Considerable
G. F. Brady	Oct. 25	Gale	Irrington	Capized	Sagama River	Nov. 5	Fire	Buenos Aires	Bunkers
Gannet	Oct. 8	Collision	Gravesend	Not stated	Thomas Maytham	Oct. 31	Ashore	Knife Island	Plates; rudder
Great Western	Oct. 5	Ashore	Guernsey	Floated	Tenyo Maru	Oct. 27	Aground	Nr. Yokohama	Floated
Goodwin	Oct. 14	Aground	Waterford Har.	Floated	Theodora	Oct. 11	Foundered	North Sea	Bridge—lost anchor and chain
Harry Steinbrenner	Nov. 5	Aground	Nr. Pt. Iroquois	Floated	Tejo	Oct. 21	Collision	Gravesend	Floated
Hollywood	Oct. 19	Aground	Columbia River	Floated	Thode Fagelund	Nov. 7	Aground	Parana River	Floated
Harald	Oct. 12	Stranded	Koivusaari	Leaking; floated	Tamesi	Oct.	Strk obj.	Not stated	Plates
Hermans	Oct. 14	Stranded	Nr. Nidden	Not stated	Tampa	Nov. 9	Aground	Off Gadsden Pt.	Floated
Helja Silva	Nov. 10	Struck reef	Off Shelburne	Sank	Texas	Nov. 9	Fire	Galveston	No. 4 hold
Iroquois	Oct. 28	Sank	San Francisco	Not stated	Umbria	Oct. 16	Fire	Genoa	Plates
Irac	Oct. 13	Ashore	Macronissi	Not stated	Ulvo	Oct. 20	Stranded	Nr. Rorvik	Not stated
Ianthé	Oct. 14	Stranded	Nr. Hurst Castle	Floated	Vindeggen	Oct. 25	Ashore	Havana Harbor	Not stated
J. F. Taylor	Oct. 19	Disabled	St. Clair River	Steering engine	Vincente Pujol	Oct. 12	Collision	Tangier	Damaged
Jeannie	Oct. 5	Ashore	Off Port Gordon	Not stated	West Irmo	Oct.	Collision	Dakar	Plates; frames
Jeska	Oct. 13	Sank	Lake Ontario	Not stated	William L. Cum-	Oct. 25	Sank	New York	Not stated
Janus	Oct. 14	Fire	Adelaide	Plates	Wm. H. Rowe	Oct. 25	Ashore	Off Long Beach	Broke up
J. F. Taylor	Nov. 11	Disabled	Sarmia	Rudder	Wilfred	Oct. 27	Aground	Gulport	Floated
Josiah B. Chase	Nov. 7	Struck obstn.	Two Bush Is.	Leaking	Wellesley	Oct. 11	Hvy. weather	Astoria	Waterlogged
Kapitan Kross	Oct. 6	Aground	Shoreham	Floated	West Marsh	Oct. 11	Ashore	Nr. Gluckstadt	Not stated
Knud	Oct. 7	Collision	Rotterdam	Not stated	Westward Ho	Nov. 7	Ashore	Hillsboro	Floated
Kirkwood	Oct. 11	Collision	Higham Bight	Not stated	Yorkmoor	Oct. 8	Collision	Gravesend	Port side
Kong Gudrod	Oct. 15	Collision	Bodo	Not stated	Yukon	Oct. 29	Sprang leak	Off Block Island	Starboard side
Katherine Park	Oct. 18	Collision	River Thames	Ashore; floated					
Karl Marx	Oct. 21	Aground	Rotterdam	Floated					
Kullen	Oct. 21	Aground	Peterhead	Floated					
Konigsberg	Oct. 21	Collision	Nr. Altona	Starboard side					
Lake Fairport	Oct. 13	Aground	Tampa Bay	Not stated					

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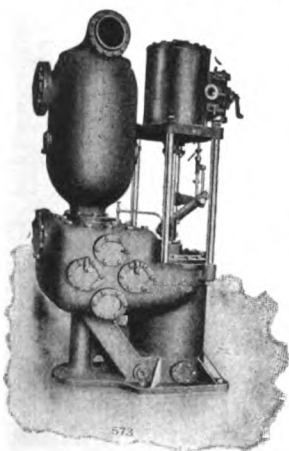


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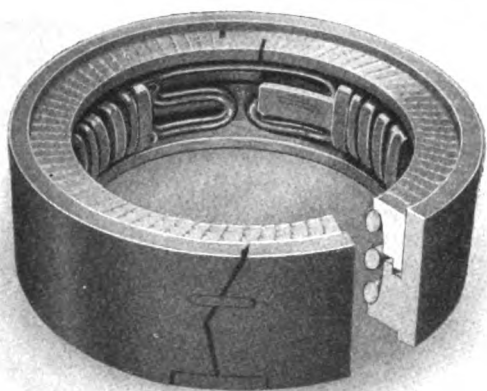
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Late Flashes On Marine Disasters

Brief Summaries of Recent Maritime Casualties—
A Record of Collisions, Wrecks, Fires and Losses

NAME	DATE	NATURE	PLACE	DAMAGE RESULTING	NAME	DATE	NATURE	PLACE	DAMAGE RESULTING
August Thyssen	Nov. 18	Collision	Long Island City	Plates; stanchions; rails	Infanta De Sagres	Nov. 16	Aground	Off Kaighns Pt.	Not stated
Antonio Lopez	Nov. 23	Fire	Havana	No. 2 hold	Itatinga	Nov. 21	Collision	Nr. Pelotas	Badly
Andrea F. Luckenbach	Nov. 9	Struck bridge	Off Gay Head	Plates; prop.; rudder	I. S. Manuel	Nov. 29	Disabled	Lake Huron	Wheel
American Shipper	Nov. 29	Disabled	Gravesend	Machinery	John H. Steel	Nov. 9	Collision	Not stated	Sank
Anbe	Dec. 7	Ashore	Copenhagen	Considerable	John Holloway	Nov. 18	Aground	Montreal	Not stated
Atlanta	Dec. 5	Ashore	State shale	Not stated	James MacWilliams	Dec. 4	Struck rock	Off Keyser Island	Sank
Alburn	Nov. 7	Aground	Low Point	Total wreck	Katrina Luckenbach	Nov. 17	Aground	Reedy Island	Floated
Ardmore	Nov. 17	Ashore	Great Yarmouth	Floated	Kate	Nov. 20	Collision	Gravesend	Damaged
			Liverpool	Port and starboard	Karimoen	Nov. 4	Aground	Port Said	Rudder head
A. F. Davidson	Dec. 7	Ashore	Whitehead	Total loss	Kia Ora	Nov. 18	Fire	Montevideo	Port side
Agwisun	Dec. 11	Explosion	New York	Badly	Kumeric	Dec. 1	Collision	Buenos Aires	Badly
Afon Dulais	Nov. 22	Collision	Royers Sluice	Stem	Leopold I. D.	Nov. 17	Collision	Channel Patch	Bows; No. 1 bilge
Andrios	Nov. 20	Ashore on rocks	London	Sank	Lake Giltedge	Nov. 16	Collision	Mobile	Not stated
					Lemuel Burrows	Dec. 1	Disabled	So. of Nantucket Shoals	Engine
Aino	Nov. 24	Collision	Oslo	Badly	Laverock	Nov. 8	Collision	Nr. Blankenese	Port side
Axenfels	Nov. 26	Struck wreck	Antwerp	No. 4 hold	Lochranza Castle	Nov. 12	Gale	Donaghadee	amidships
Baron Douglas	Nov. 16	Aground	Bermuda	Floated	Lien Shing	Dec. 12	Struck	Amherst Rocks, Shanghai	Wheel; upper works
Braga	Nov. 18	Ashore	North Aspra Isl.	Not stated					Sank
Bolingbroke	Nov. 9	Ashore	South Cape Bauld	Floated; forepeak	Mantilla	Nov. 10	Explosion	Sparrows Point	Badly
					Mexican Trader	Nov. 16	Collision	Mobile	Plates
Bellfield	Nov. 11	Collision	Durban	Damaged	Meigle	Nov. 24	Struck rock	Nr. Pilley's Isl.	Shaft; lost prop.
Berwickshire	Nov. 10	Collision	Antwerp docks	Plates					
Belgique	Nov. 10	Collision	Antwerp docks	Stem	Maasdam	Nov. 30	Fire	Off Portugal	Not stated
Bert	Nov. 10	Sank	Off Beckton Jetty	Floated	Maria Couroupu	Nov. 4	Ashore	Dardanelles	Total loss
Bockenheim	Dec. 6	Ashore	Savannah River	Floated	Marcel	Nov. 8	Collision	Nr. Blankenese	Starboard
Cato	Nov. 3	Ashore	Swash	Floated					bow
Claus	Nov. 4	Collision	Nr. Gluckstadt	Not stated	Mont Cervin	Nov. 11	Fire	Marseilles	Badly
Cripple Creek	Nov. 4	Fire	Manchester Ship Canal	Not stated	Mareado Cen	Nov. 18	Gale	Off Finisterre	Sank
					Maple Hill	Dec. 10	Collision	Sands Point	Sank
Chalata	Nov. 6	Stranded	Saltdean	Total wreck	Maryguery Marx	Nov. 25	Collision	Kiel	Badly
Casper	Nov. 6	Aground	South Quarken	Not stated	Mary	Nov. 25	Collision	Kiel	Badly
Cranstone	Nov. 15	Fire	Swansea	Nos. 1 and 2 holds					
					Neuzen	Nov. 4	Collision	Rotterdam	Damaged
Chancellor	Nov. 13	Ashore	Liverpool	Not stated	Namisco	Nov. 13	Aground	Cape Gata Rock	Total loss
Courier	Nov. 18	Sprang leak	Melbourne	Floated	Newsome	Dec. 6	Collision	Philadelphia	Not stated
Christina	Nov. 18	Collision	Constantinople	Plates	Neshaminy	Dec. 8	Sprang leak	Kennebec River	Not stated
Cambrian Countess	Nov. 18	Collision	River Scheldt	Not stated	Nardana	Nov. 25	Collision	Antwerp	Port side
Charles L. Hutchinson	Nov. 19	Disabled	So. Chicago	Wheel					
Cottonwood	Nov. 27	Ashore	Copper Mine Pt.	Abandoned	Oritani	Nov. 27	Collision	Philadelphia	Port bow
Colusa	Nov. 16	Fire	San Francisco	Not stated	Point Bonita	Nov. 15	Ashore	Oakland Creek	Floated
City of Benares	Nov. 18	Fire	Calcutta	Nos. 2, 3, 4 holds	Point Fermin	Nov. 23	Collision	Oakland Estuary	Damaged
					Pytheas	Dec. 2	Collision	Philadelphia	Starboard
Cedarhurst	Nov. 23	Collision	Nr. Stony Point	Damaged					bow
City of Norwich	Nov. 30	Ashore	Blue Point	Floated	Peregrine	Nov. 4	Collision	Off Shadwell Dock	Beltling; Bulwarks
Coronada	Nov. 27	Aground	East of South Pass	Floated					
Chas. Christensen	Dec. 3	Collision	Grays Harbor	Above waterline	Penang	Nov. 11	Capsized	Wapping	Rigging; starboard side
									Damaged
Charles M. Everest	Dec. 5	Collision	Delaware River	Bow; forepeak	Phidias	Dec. 8	Collision	River Thames	Damaged
					Quaco Queen	Nov. 26	Collision	New York	Damaged
Commandant Alcadio	Nov. 21	Collision	Nr. Pelotas	Badly	Quercus	Dec. 3	Collision	Dublin	Damaged
Di Sagres	Nov. 17	Ashore	Delaware River	Not stated	Raven	Nov. 3	Collision	Off Wapping	Not stated
Dorothy	Nov. 17	Sank	Jersey City		Renteria	Nov. 4	Collision	Rotterdam	Damaged
Development	Nov. 3	Collision	River Mersey	Bows; steam-pipes	Roath	Dec. 10	Collision	River Thames	Damaged
					Swiftway	Nov. 16	Aground	Villa Constitution	Floated
Draa	Nov. 4	Ashore	River Saloum	Not stated	Saguache	Nov. 15	Collision	Rotterdam	Damaged
Dimitris	Nov. 11	Collision	Nr. Maassluis	Badly	South Shore	Nov. 19	Sank	Newark	
Dustin G. Cressey	Dec. 6	Gale	Off Block Island	Davits; rails	Seneca	Nov. 19	Aground	Off Longport	Floated
E. Antonio	Nov. 19	Aground	San Francisco	Not stated	Santa Barbara	Nov. 23	Collision	Oakland Estuary	Damaged
Ellin	Nov. 26	Collision	Gravesend	Damaged	Simon Von Utrecht	Dec. 2	Collision	Philadelphia	Starboard
European	Nov. 27	Collision	Philadelphia	Starboard quarter					quarter
					Savonia	Nov. 15	Collision	Off Wapping	Sank--raised
Emily F. Northam	Nov. 28	Aground	Baker's Island Bar	Floated	Scandinavia	Nov. 17	Explosion	Rotterdam	Not stated
Emperor of Montreal	Nov. 25	Aground	Ellis Bay	Floated	Southhead	Dec. 6	Ashore	Sound of Islay	Forepeak
Estrella	Nov. 10	Fire	Buenos Aires	Not stated					
Emperor of St. John	Nov. 9	Struck lock walls	Montreal	Plates	Trekieve	Nov. 18	Aground	Off Kent Island	Floated
					Talabot	Nov. 18	Aground	Port of Yokohama	Not stated
Edna M. McKnight	Dec. 7	Not stated	At sea	Total loss	Trojan	Nov. 23	Collision	Nr. Stoney Point	Badly
Estonia	Nov. 19	Ashore	Off Ilvaler	Floated; rudder	Tiverton	Nov. 24	Collision	San Francisco	Bow; amidships
Foronian	Nov. 26	Ashore	Off Huron Island	Floated	Totilla	Dec. 2	Ashore	Lanelade	Not stated
Frances E. Moulton	Nov. 12	Ashore	Cape Ray	Not stated	Torpoint	Nov. 3	Fire	Brest	Floated
Fort Bragg	Nov. 24	Collision	San Francisco	Not stated	Texas	Dec. 7	Collision	Nr. Tarifa	Badly
Foam Queen	Nov. 4	Collision	Off Shadwell Dock	Stem	Thelma	Dec. 4	Ashore	Nr. West River	Total loss
Fagerbro	Nov. 11	Collision	Nr. Maassluis	Badly					
Fernando	Nov. 14	Stranded	So. of Bari	Floated	Union Jack	Nov. 30	Aground	Off Penguin Isl.	Total loss
					Venus	Nov. 9	Ashore	Hogland Island	Not stated
G. H. Ingalls	Nov. 28	Aground	Big Point	Floated	W. K. Field	Nov. 26	Aground	Pipe Island	Forepeak; floated
Galveston	Nov. 15	Collision	Rotterdam	Damaged					
Gaston	Nov. 22	Aground	Cape Cod Canal	Floated	West Gambo	Nov. 14	Disabled	New York	Engine
Gaultois	Nov. 22	Ashore	St. Pierre	Total loss	Western	Nov. 30	Ashore	Budge Rock	Not stated
Grangepark	Nov. 4	Touched ground	Long Island Sound	Damaged	Wolsun	Nov. 28	Aground	Off Cape Charles	Port side; floated
Gwentland	Nov. 18	Collision	River Scheldt	Steering gear	Walkenna	Dec. 3	Aground	Columbia River	Floated
					W. H. Eastwood	Nov. 30	Not stated	Riverport, N. S.	Rudder post
Gilbert Stancliffe	Dec. 3	Disabled	Off Green Island	Leaking					leaking
H. Houghton	Nov. 20	Fire	St. Clair River	Total loss	W. C. Smith	Dec. 5	Storm	Port Herbert	Wrecked
H. H. Hettler	Nov. 17	Ashore	Grand Island	Total loss	Wilhelmina	Nov. 26	Collision	Gravesend	Port bow
Hochelaga	Nov. 17	Collision	Channel Patch	Aground; floated	Wittekind	Nov. 26	Aground	Nr. Flemso	Not stated
Huguenot	Nov. 21	Aground	Galveston	Floated	Zealandia	Dec. 4	Fire	Off Buenos Aires	Cabins
H. W. Baxter	Dec. 1	Ashore	Massett Inlet	Not stated					
Horn	Nov. 10	Struck rocks	Nr. Cape St. Mathieu	Bottom; machinery					
Hindustan	Nov. 2	Collision	River Mersey	Plates					
Heathfield	Dec. 10	Collision	River Thames	Damaged					



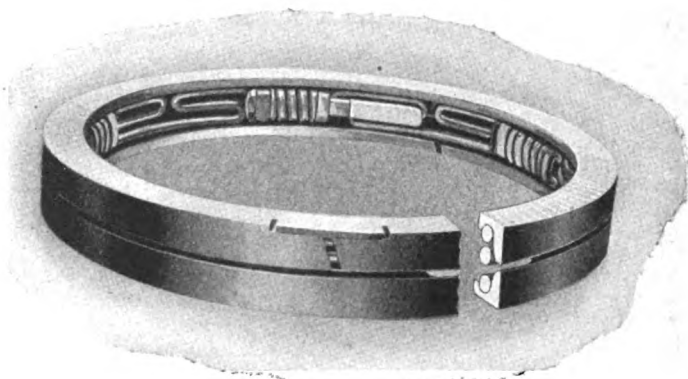
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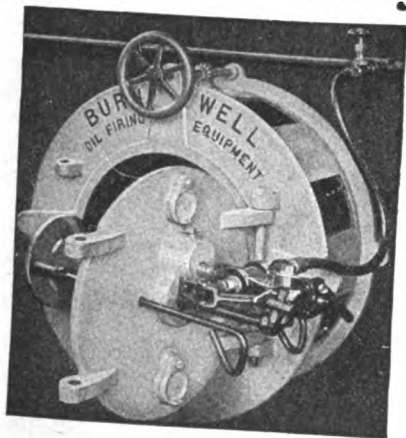


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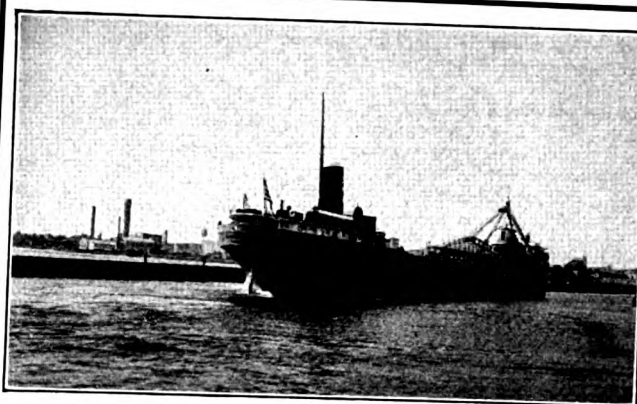
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New Trade Publications

ENGINE INDICATOR—Bacharach Industrial Instrument Co., Pittsburgh, has issued a bulletin describing a type of engine indicators it is manufacturing. Value of indicator readings is discussed and the bulletin is illustrated fully to show the construction and operation of the indicator.

REFRACTORY CEMENT—General Refractories Co., Philadelphia, has issued a leaflet describing a high temperature cement it is producing for use in furnaces and similar places where high temperature is met.

ROLLER BEARINGS—A handbook of information on the application of its roller bearings has been compiled and published by the Hyatt Roller Bearing Co., Newark, N. Y. It contains data of value to engineers and draftsmen concerned with the designing and development of plant and production equipment. This bulletin is supplemental to other publications by this company, covering in one volume bearing applications to general types of industrial equipment. It contains load and rating tables, formulas for determining bearing sizes for specific applications, suggestions for mountings and construction details of all types of the company's roller bearings.

ARC WELDERS—General Electric Co., Schenectady, N. Y., has issued a bulletin covering its large tank and pipe welders of various types. The devices are described in detail, with ample illustrations. Installations in operation are shown and descriptive matter explains fully the method of operation.

BOILER DRUMS—Seamless drums for high-pressure boilers are discussed in a new booklet sent out by Roland Steel Co., 114 Liberty street New York. These drums are fabricated in the German plants of Press & Walzwerk Co., and distributed in this country by the first named company.

CHAIN BLOCK—A gravity-lowering chain block is illustrated and described in a leaflet by Herbert Morris Inc., Buffalo, manufacturer of cranes, monorails and chain hoists. The device is designed to lower loads without

movement of the hand chain, under full control and without effort. Interior construction and operation are shown in illustrations.

DRAFT GAGES—A draft gage developed by Lewis M. Ellison, 214 West Kinzie street, Chicago, is described and illustrated in a bulletin just issued. The gage is designed for use on boilers to give efficiency of firing and produce economy of fuel by keeping draft steady. It is furnished in vertical or inclined types, single or multitube.

PYROMETERS—The features and methods of operation of an optical pyrometer manufactured by the Bacharach Industrial Instrument Co., Pittsburgh, are given in a pamphlet just issued. A table describing the applications, method of making determinations and the corrections to be applied also is given.

ELECTRICAL INSTRUMENTS—The General Electric Co., Schenectady, N. Y., has issued several pamphlets in the form of loose leaf catalog pages, showing drum type controllers, automatic voltage starters for synchronous motors, synchronous motor and condenser panels, automatic starters for slip ring induction motors, and direct heat electric furnaces.

PULVERIZED FUEL—Unit pulverizers for industrial furnaces manufactured by the Combustion Engineering Corp., New York, are described in a catalog recently issued. Construction, operation and application of these pulverizers are given.

SUCTION TORCH—A bulletin has been issued by Hauck Mfg. Co., Brooklyn, N. Y., describing a suction torch recently placed on the market. It operates without the necessity of maintaining pressure on the oil supply tank, thus eliminating an element of danger. Details of the new type of torch are presented.

VALVES—Homestead Valve Mfg. Co., Homestead, Pa., has issued a booklet featuring its type of valves and containing a catalog of various sizes and materials.

TURBO COMPRESSORS AND BLOWERS—A descriptive circular covering its compressors

and blowers has been issued by the American Brown Boveri Electric Corp., New York. It covers the general subject of blowing and compression, regulation, and then describes the construction and operation of its types for various uses. The illustrations are complete and diagrams and charts serve further to illustrate the text.

ELECTRIC HOISTS—A catalog has been issued by the American Engineering Co., Philadelphia, covering its various devices and including six new sizes recently added to its line. This carries the range to 24,000 pounds capacity. The catalog covers four distinct classes, each with four to six sizes, with various types of suspension and control. It is fully illustrated by halftones and diagrams.

TRUCKS AND TRACTORS—Four bulletins have been issued by the Automatic Transportation Co., Inc., Buffalo, covering its elevating platform truck, tiering-lifting truck, three wheel tractor and locomotive crane truck. Specifications for each type are given.

INSULATING BRICK—A bulletin by the Celite Products Co., Los Angeles, describes four types of brick produced by this company, adapted to various ranges of temperature and uses. It is illustrated to show proper method of using in various installations.

ELECTRIC HEAT—Use of electricity for production of industrial heat is presented in a bulletin by the General Electric Co., Schenectady, N. Y. It is a series of advertisements used by this company in trade publications to carry the message of heat for various purposes.

TURBINE VENTILATORS—Allen Air Turbine Ventilator Co., Detroit, is sending out a booklet covering its multi-vane ventilators for various industrial uses. It is illustrated with detail drawings of construction and by actual installations. Tables of specifications also are given.

FIRE BRICK CEMENT—A. P. Green Fire Brick Co., Mexico, Mo., has issued a leaflet covering its all-temperature fire brick cement with high alumina base. Its use is described for bonding, surfacing, reclaiming, filling and repairing.

SKIP LIFT—Application of the skip hoist principle to the elevation of bulk materials in industrial use is covered in a bulletin by the R. H. Meaumont Co., Philadelphia. The lift may be automatic, semiautomatic or manually operated.

Business News for the Marine Trade

C. & P. Trucking & Stevedore Co. has been incorporated at New York with \$10,000 capital L. Pulaski, I. Pulaski and C. Collins. F. Mahar, 189 Montague street, is attorney.

Marine Warehouse has been incorporated at New York to sell ship equipment and contract for dredging work, with \$20,000 capital, by C. A. Cohron, M. Cohron and J. Garlick. M. Tacker, 217 Broadway, is attorney.

Siemund Marine Electric Welding Co., 29 Broadway, New York, Henry L. Siemund president, is building a 2-story building 23 x 85 feet at 426 Washington street.

Gillen Bros. has been incorporated at New York to operate a navigation business with 100 shares no par value, by J. A. Martin, C. P. Schroetter and P. J. Dobson. Foley & Maryin, 64 Wall street, New York, are attorneys.

Cameron Dredging Co. has been incorporated at Detroit to do dredging work and construct vessels, with \$100,000 capital, by John H. Cameron, 1010 Francis Palms building, De-

troit, Donald H. Cameron and Alan G. Cameron.

City of Bradenton, Fla., has let contract to Wilbanks & Pierce to dredge channel from city dock to main channel of Manatee river.

Lee county commissioners are having plans made for dredging 16-foot channel from Fort Myers, Fla., to Punta Rassa on the Gulf of Mexico.

Adams Boat Works, Alexandria Bay, N. Y., has been incorporated with \$25,000 capital and 240 shares no par value by M. Glass, E. White and C. White. Wiltse & DeYoung, Alexandria Bay, are attorneys.

Alexander Hall & Co., Aberdeen, Scotland, have booked orders for two non-propelling hopper barges and a seagoing tug.

Toledo Shipbuilding Co., Toledo, O., which is building a car ferry for the Wabash railroad for service between Milwaukee and Frankfort, Mich., may be awarded a second ferry of the same size, 380 feet long with

3600-horsepower steam engines, driving twin screws, with gross tonnage of 3000 tons.

Royal Mail Steam Packet Co. is negotiating for five passenger ships of 15,000 tons each and is likely to award them to Harland & Wolff. They will be used from London to Buenos Ayres, Argentine.

Moore Dry Dock Co., Oakland, Calif., has launched the Peralta, first of several turbo-electric driven ferries for the Key System Transit Co.

American Shipbuilding Co. has laid the keel for a 580-foot freighter for the Kinsman Transit Co. Keel for a 596-foot freighter for the Inland Steamship Co. will be laid early in November.

Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., has been awarded contract for main motors, generators and control equipment for two fleet submarines.

A petition in bankruptcy has been filed by the Ocean Ship Chandlery Co., Ltd., 60 Pearl street, New York, showing liabilities of \$30,777 and assets of \$6566.